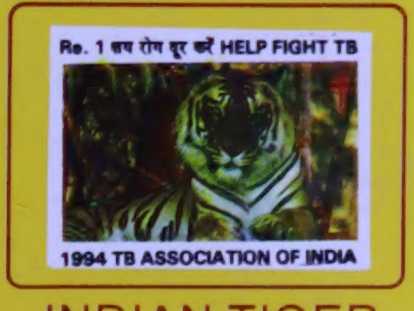
45th
TB SEAL CAMPAIGN
1994

TB SEALS ON 'ENDANGERED SPECIES OF INDIA'

RED PANDA



INDIAN TIGER

NILGIRI TAHR

THE TUBERCULOSIS ASSOCIATION OF INDIA
3, RED CROSS ROAD, NEW DELHI-110 001.

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Concern

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JUST ONE KIT A DAY
FOR THE FIRST 2 MONTHS OF TREATMENT

*Provides all the
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Rifampicin
Isoniazid
Pyrazinamide

* Completely eradicates
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Glaxo
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ACKNOWLEDGEMENTS

We are grateful to our donors, advertisers, contributors and well-wishers who have contributed so generously towards making this Souvenir a success.

We are grateful to all who have contributed useful, meaningful and educative articles which incorporate their views as well, in this Souvenir.

The Association places on record its sincere thanks to all who have helped, assisted and contributed to the success of this Special Souvenir released on the occasion of the 45th TB Seal Campaign 1994 - Gandhi Jayanti Day.

The Tuberculosis Association of India is grateful and indebted to the respected Rashtrapatiji for his patronage, guidance and blessing.

The contents of this Souvenir mainly comprise of Messages from dignitaries and material on Health Education etc, in which the views expressed are those of the contributors.

THE TUBERCULOSIS ASSOCIATION OF INDIA

3 RED CROSS ROAD;
NEW DELHI-110 001

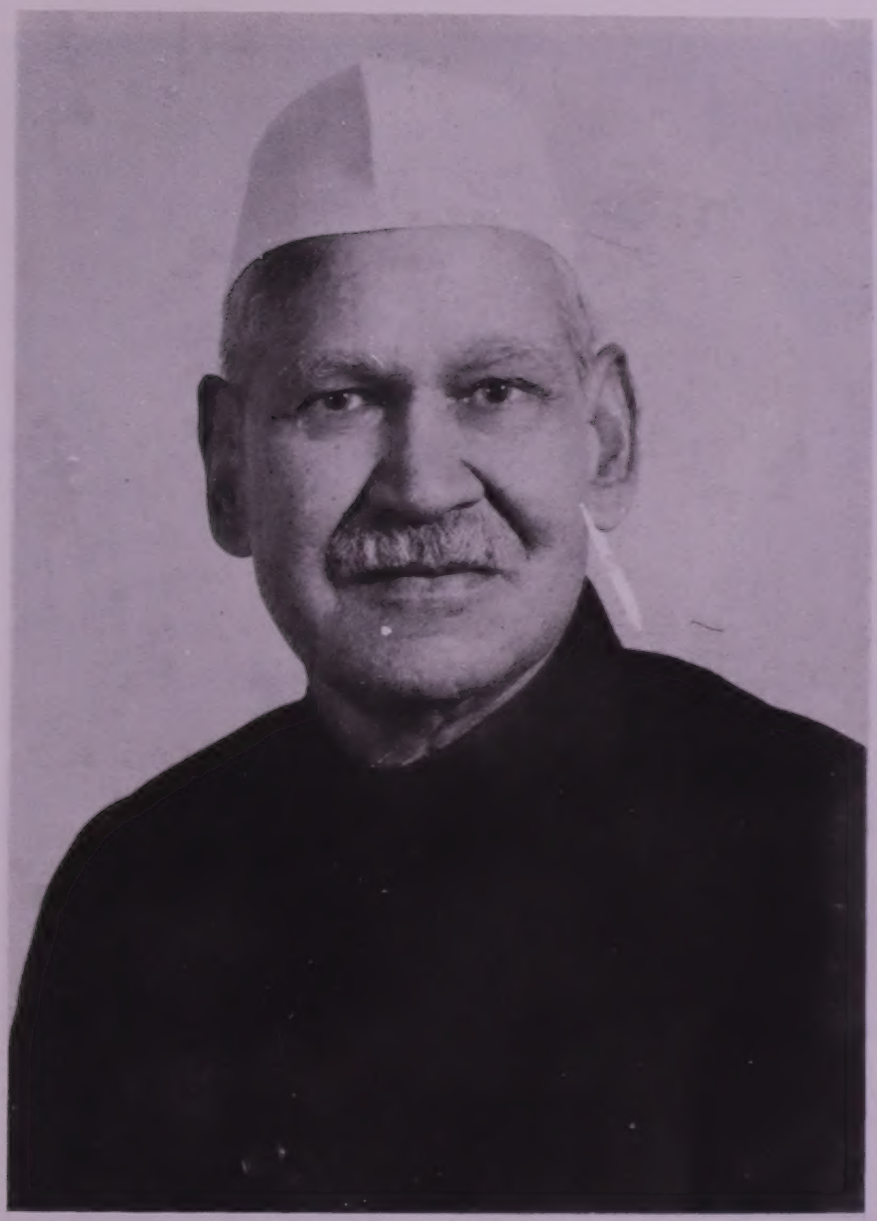
45TH TB SEAL CAMPAIGN

COMMENCING
2ND OCTOBER, 1994

Persistent cough with sputum, loss of weight and appetite, general weakness, low grade fever and spitting of blood are usual symptoms of tuberculosis. Anyone having any of these symptoms should visit a TB clinic or the nearest health centre for a check-up.

BUY TB SEALS IN LARGE NUMBERS AND HELP YOUR TB ASSOCIATION TO HELP YOU. A TB SEAL COSTS RUPEE ONE ONLY

HELP FIGHT TB



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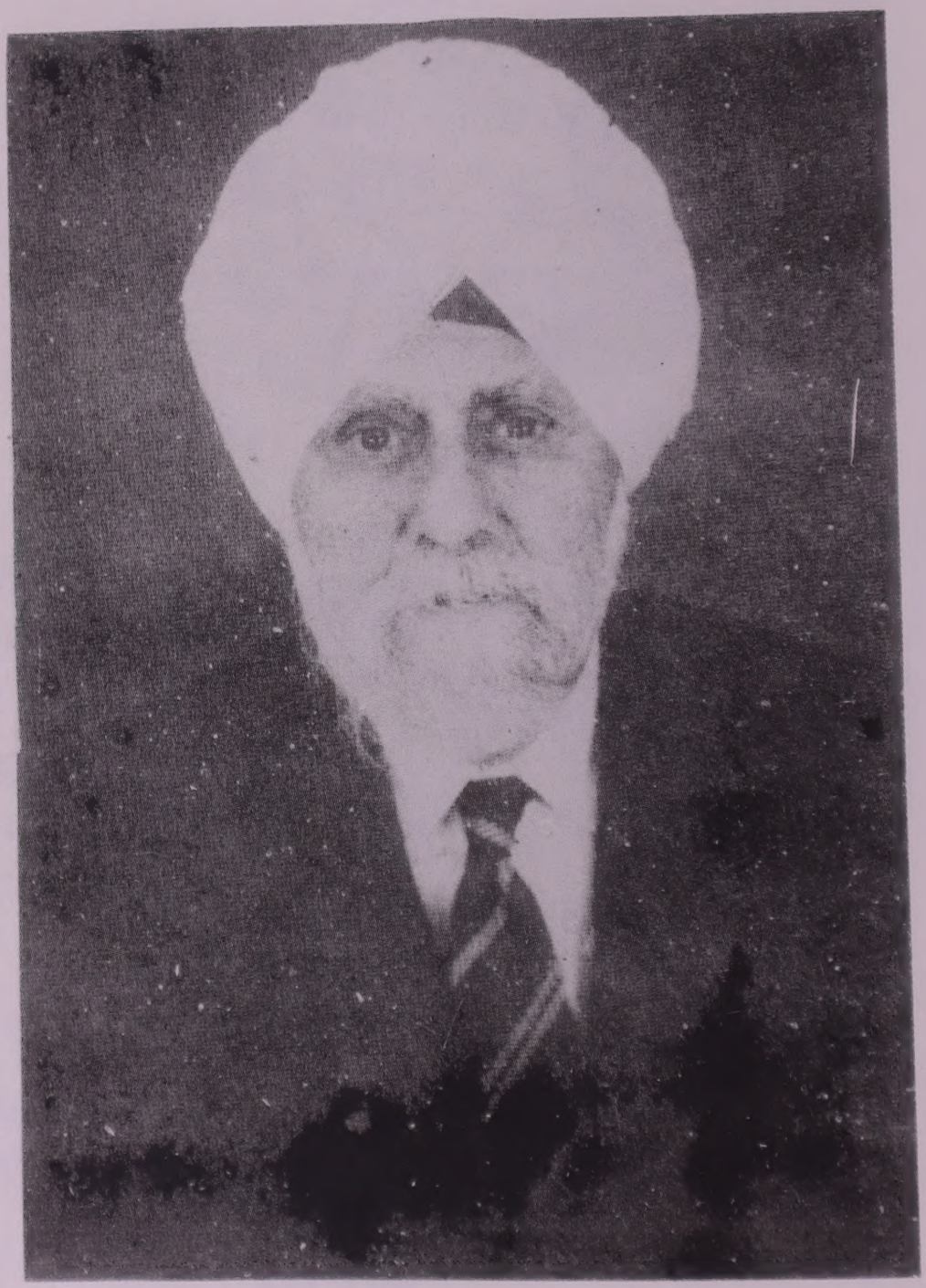
OUR PATRON



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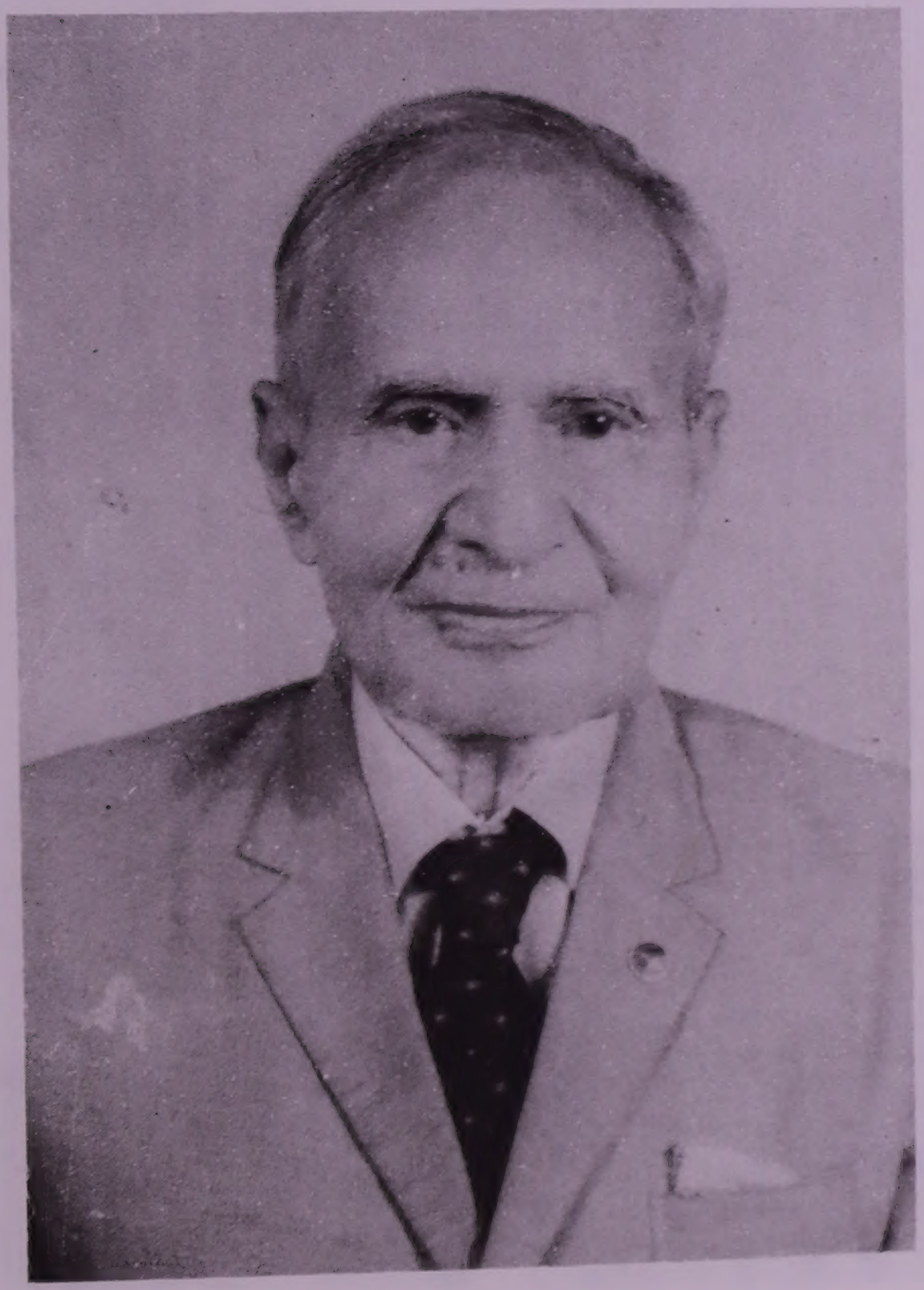
EMERITUS PRESIDENT

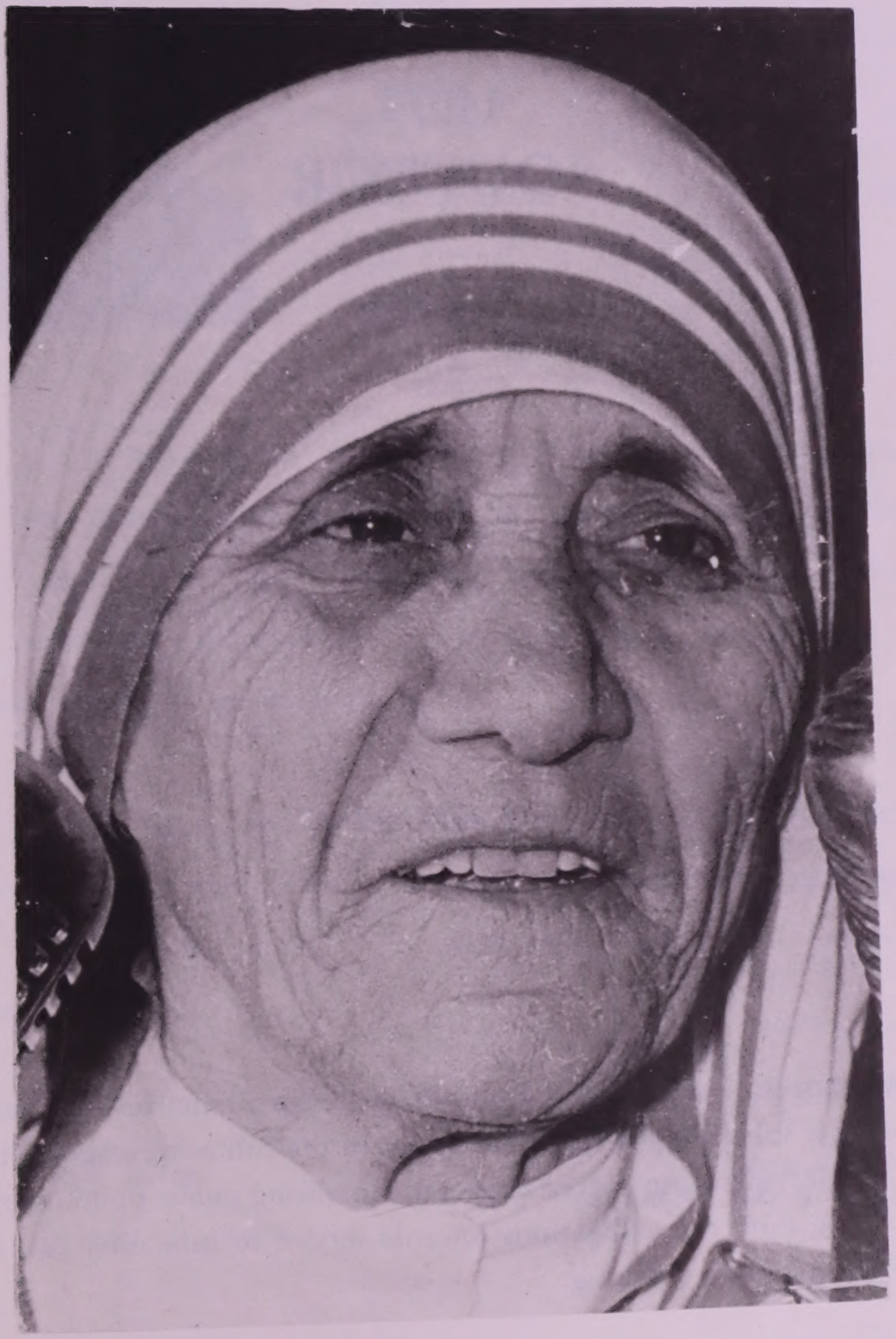


DR. P.K. SEN
OUR PRESIDENT

DR. A.K. MUKHERJEE
OUR CHAIRMAN

OUR BELOVED MOTHER SPREADING THE LOVE OF GOD :

CRUSADER IN ALLEVIATING HUMAN SUFFERING



MOTHER TERESA

45th
TB SEAL CAMPAIGN
1994
SOUVENIR

MESSAGES

We express our profound gratitude to all the dignitaries who have sent their valued MESSAGES published in the following pages. The MESSAGES will cause deeper impact in mobilizing public opinion and means to fulfil our obligations towards service to humanity and in alleviating human suffering.

सत्यमेव जयते

राष्ट्रपति
भारत गणतंत्र
PRESIDENT
REPUBLIC OF INDIA

MESSAGE

I have great pleasure in extending my felicitations to the Tuberculosis Association of India on their launching the 45th T.B. Seal Campaign as part of their efforts to eradicate tuberculosis. I wish them all success in their dedicated endeavours.

I have no doubt that, as on earlier occasions, our people will come forward to contribute generously to this noble cause. I wish the T.B. Seal Campaign every success.

New Delhi
August 24, 1994

S. D. Sharma
(SHANKER DAYAL SHARMA)

उप-राष्ट्रपति, भारत
नई दिल्ली

VICE-PRESIDENT
INDIA
NEW DELHI

September 1, 1994

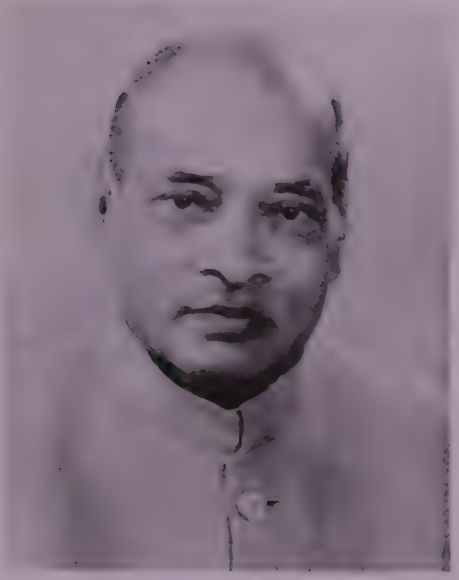
MESSAGE

Tuberculosis, the great scourge that it was once, is no more a dreaded disease thanks to the phenomenal success achieved by medical science in its diagnosis and treatment. The message has, however, to go to the general public that the disease is preventible and curable. Both the government and the voluntary agencies have to put in concerted efforts to help those afflicted with the disease in their proper treatment.

As the Tuberculosis Association of India is launching its 45th T.B. Seal Campaign I offer my good wishes to the dedicated workers of the Association. I hope all sections of the people will cooperate with the Association in this noble cause.

Narayanan

(K.R. NARAYANAN)



सत्यमेव जयते

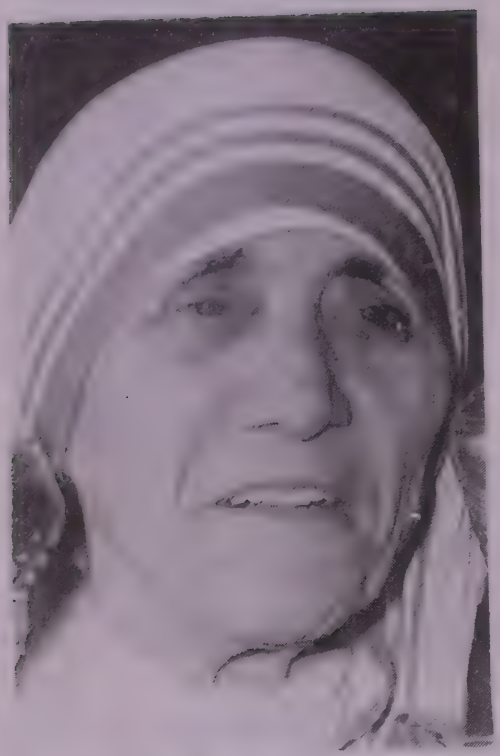
PRIME MINISTER

MESSAGE

I am happy to learn that the Tuberculosis Association of India is launching the 45th TB Seal Campaign on October 2, 1994 and also bringing out a Special TB Seal Souvenir on this occasion. The Tuberculosis Association of India has made a significant contribution to improving the facilities available for the treatment of tuberculosis in our country and in alleviating the suffering of its victims. In launching its next campaign on Gandhi Jayanti Day, the Association has imbued it with the same humanism and concern for the poor which had inspired Mahatma Gandhi. This is rightly the spirit in which such campaigns have to be conducted for their success, for which I convey my best wishes.

(P.V. Narasimha Rao)

New Delhi
September 2, 1994



MISSIONARIES OF CHARITY
54-A, J.C. Bose Road,
Calcutta-709 016

MESSAGE

Dear Members of the Tuberculosis Association of India

God is blessing your Association abundantly for the selfless service rendered to the very many patients suffering from Tuberculosis.

My prayer for you is that you continue to be God's love and compassion to all you meet specially the sick.

The poor and suffering have much to give us – Let us ask God to make us worthy to serve our fellowmen who live and die in poverty and hunger.

God loves you – love others as God loves you.

God bless you.

Mother Teresa MC

11th September, 1994

MOTHER TERESA

PABAN SINGH GHATOWAR

उप मंत्री
स्वास्थ्य एवं परिवार कल्याण
भारत सरकार
नई दिल्ली - 110 011
DEPUTY MINISTER
FOR HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA
NEW DELHI - 110 011

September 2, 1994.

M E S S A G E

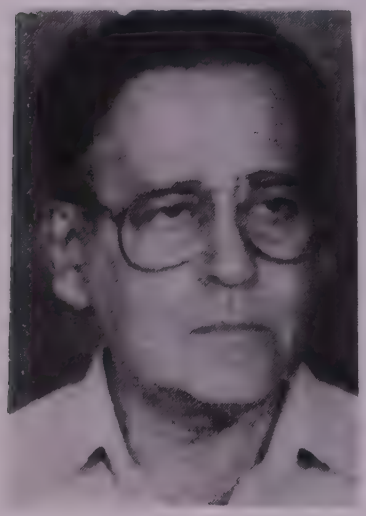
I am happy to know that the Tuberculosis Association of India is organising the 45th Seal Campaign on 2nd October, 1994, the Birth Anniversary of the Father of the Nation.

Tuberculosis continues to be a major problem particularly in the developing countries. Concerted efforts on the part of governmental and non-gonvernmental agencies are required to eradicate this disease. Campaigns like this provide opportunities to motivate the people for their active participation in Tuberculosis Control and increase awareness.

I wish the 45th Tuberculosis Seal Campaign all success.

(PABAN SINGH GHATOWAR)

उपराज्यपाल
दिल्ली
LIEUTENANT GOVERNOR
DELHI



राज निवास
दिल्ली-११००५४
RAJ NIWAS
DELHI-110054

24.8.94

MESSAGE

The 45th T.B.Seal Campaign is being launched by the Tuberculosis Association of India on 2nd October-Gandhi Jayanti Day. Tuberculosis, though no longer regarded as a 'dreaded disease' still continues to be a major public health problem in the country. The magnitude of the problem calls for all-out efforts by all governmental and non-governmental agencies to eradicate the disease from the country. For any public health programme to succeed, awareness and participation of the people is essential. The T.B.Seal Sale Campaign is an important step in this regard.

I wish the T.B.Seal Sale Campaign all success.

(P.K.DAVE)

Dr. C. SILVERA

स्वास्थ्य एव परिवार कल्याण राज्य मंत्री
भारत
नई दिल्ली-110011
MINISTER OF STATE
FOR HEALTH AND FAMILY WELFARE
INDIA

Date: September 6, 1994

M E S S A G E

I am happy to learn that the Tuberculosis Association of India is launching the 45th TB Seal Campaign, most befittingly, on 2nd October, 1994 and that a Souvenir is being brought out to mark the occasion.

The TB Association of India has been carrying on its crusade against TB for the last nearly five decades, thereby supplementing the efforts of the Government in the implementation of the National TB Control Programme. Needless to add, the Association deserves the support and cooperation of all public spirited citizens of the country.

I wish the 45th TB Seal Campaign and the publication of the Souvenir a grand success.

Sd/-
(DR.C.SILVERA)

THE TUBERCULOSIS ASSOCIATION OF INDIA
3, RED CROSS ROAD, NEW DELHI-110 001

MESSAGE

SEAL SALE is an example of a simple idea, catching the imagination of the world and leading to action which befitted Man greatly.

We have gradually increased the Sale. The money collected allowed us to better the service.

More than our routine service we had extended the information that tuberculosis is still taking heavy toll and we are fighting to control it. Our resources fall short of the need. We need more PEOPLES PARTICIPATION THAN MONEY. Knowledge is the mother of INTEREST, without which intelligent participation is not possible to have. Therefore we should develop LITERATURE for public in an optimistic tone, telling them Tuberculosis CURE IS AT THE DOOR OF THE PATIENT, IF HE DOES NOT DELAY AND TAKES THIS ADVANTAGE. We should also start PILOT STUDIES to approach the General Public Health Services to cooperate and collaborate with them, specially with the "HEALTH FOR ALL MEASURES". Also explore ways and means to book cooperation with the General Practitioners, specially in the rural areas. Tuberculosis Associations should act as the PATH-FINDER FOR OTHERS TO FOLLOW FOR TUBERCULOSIS CONTROL.

As a fellow fighter I sincerely wish that we have greater success this year than in yester years.

Sd/-
P.K. SEN
President
Tuberculosis Association of India

7th September 1994

DR. A.K. MUKHERJEE
MS. D. Phil (Oxford); FAMS
DIRECTORATE GENERAL OF HEALTH SERVICES
TELE. NO. : 301 84 38 (O)
301 90 63
65 59 30 (R)

DIRECTORATE GENERAL OF HEALTH SERVICES
NIRMAN BHAVAN
NEW DELHI-110011

MESSAGE

The 45th TB Seal Campaign of the Tuberculosis Association of India is being inaugurated by our most respected Rashtrapatiji on 2nd October, 1994, the Gandhi Jayanti Day. On this auspicious occasion, I send my sincere greetings and good wishes to all our countrymen and workers in the field of Tuberculosis.

The incidence and prevalence of Tuberculosis in the country are high and a sizeable segment of our population is afflicted with the disease which is also responsible for considerable economic drain on our resources. The ravages of this disease must be forestalled.

While the Tuberculosis Association of India, its State affiliates and Tuberculosis Workers are engaged in alleviating human suffering, voluntary organisations need to have sufficient funds to achieve their goals. The TB Seal Campaign not only associates the people with the TB Control Programme but enables fund raising also.

I fervently appeal to all to support the TB Seal Campaign in making it a success.

New Delhi
8th September, 1994

(A.K. MUKHERJEE)
CHAIRMAN
TUBERCULOSIS ASSOCIATION OF INDIA

ले. जनरल पी के चक्रवर्ती, पी वी एस एम, पी एच एस
महानिदेशक सशस्त्र सेना चिकित्सा सेवा
एवं कर्नल कमान्डेन्ट
Lt Gen P K Chakrabarti, PVSM, PHS
Director General
Armed Forces Medical Services
& Colonel Commandant

रक्षा मंत्रालय
'एम' ब्लाक
नई दिल्ली -११० ००१
Ministry of Defence
'M' Block
New Delhi -110 001

MESSAGE

I am delighted to know that the Tuberculosis Association of India is launching its 45th TB Seal Campaign on 2 Oct 94 on Gandhi Jayanti Day.

Tuberculosis remains a major health problem in our country. The TB Association of India has been playing an important role in national TB control programme. The TB Seal campaign will not only raise money for the Association to achieve its goal but will also involve the public in the control of this disease.

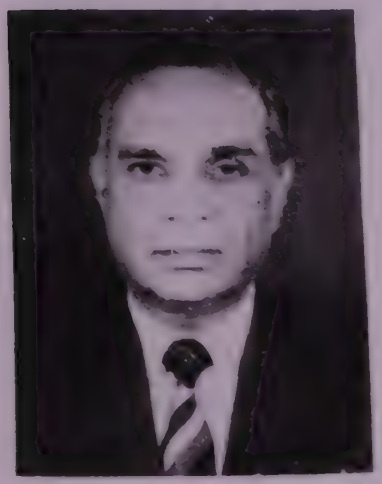
I wish the Association all success in this endeavour.

New Delhi
Aug 94

(PK Chakrabarti)
Lt Gen
DGAFMS

DR. V.D. MATHUR

DIRECTOR GENERAL
(Railway Health Services)
Government of India
Ministry of Railways (Railway Board)



MESSAGE

I am extremely happy to know that the Tuberculosis Association of India is launching its 45th TB Seal Campaign on the Gandhi Jayanti Day, the 2nd of October, 1994. Indian Railway TB Association has been in the forefront in the TB Seal Campaign and have for the last 3 consecutive years won a special award for selling a record number of TB Seals.

With the emergence of AIDS/HIV Infection, TB has again assumed a challenging problem. To combat this problem, public awareness and participation is essential. TB Seal Campaign not only raises the money for the TB Control Programme but also achieves their action involvement in the programme.

I wish the 45th TB Seal Campaign all success.

DR. V.D. MATHUR

Dr. G.V. SATYAVATI

DIRECTOR GENERAL
INDIAN COUNCIL OF MEDICAL RESEARCH
ANSARI NAGAR, NEW DELHI-110 029

MESSAGE

I am delighted to know that the Tuberculosis Association of India is launching the 45th TB Seal Campaign on the 2nd October, 1994, i.e. the birthday of Mahatma Gandhi, the Father of the Nation.

The Tuberculosis Association of India has been tirelessly working to spread its message of mobilizing public opinion to eradicate this well-known disease which has known even in ancient India as evidence by several references to the disease in the renowned **Samhitas** of Ayurveda. Tuberculosis has assmued new significance recently on account of its close association with the new dreaded diseases of mankind *viz.*, AIDS. In this context, the attempts of the Tuberculosis Association of India in enlisting community participation to spread the message that **tuberculosis is not only curable but also preventable** are laudable. The Indian Council of Medical Research (ICMR) gives high priority to communicable diseases like Tuberculosis. The Council's own research contributions in domiciliary chemotherapy of tuberculosis as also epidemiology of tuberculosis and other aspects of research (which have assisted the National Tuberculosis Control Programme) through its Tuberculosis Research Centre have won International recognition.

On behalf of the ICMR and myself, I wish all success to the 45th TB Seal Campaign.

September 3, 1994

Dr. G.V. SATYAVATI

Dr. R.C. JAIN

LALA RAM SARUP INSTITUTE OF
TUBERCULOSIS AND ALLIED DISEASES
SRI AUROBINDO MARG
NEW DELHI-110 030

MESSAGE

Inauguration of 45th TB Seal Campaign on 2nd October 1994 - the birthday of our Father of the Nation is a reminder for the Nation to dedicate ourselves in the fight against tuberculosis.

TB is a major health problem of our Country and H.I.V. infection will further worsen it. The fight against TB needs involvement and cooperation of the community at large. There is an appalling ignorance in the public about TB. Awareness has to be created in the public that TB is easily diagnosed and cured if full and regular treatment is taken and these facilities are provided free by the Government. Here non Government Organisations can play an important role and supplement the Government endeavour.

In this direction the efforts of TB Association of India, its State and District affiliates are laudable by organising TB Seal Sale Campaign all over the country. TB Seal Sale Campaign is an important event for creating awareness amongst public & raising funds required for the activities. Public should participate in large numbers & donate generously to help in the fight against TB.

My best wishes for the success of the Campaign.

Dr. R.C. JAIN
Chairman of the Standing
Technical Committee & President
of the National Conference

New Delhi
8th September, 1994

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The Tuberculosis Association of India

Shri Ashok Sachdeva	*Secretary General*
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THE DOUBLE BARRED CROSS

INTERNATIONAL EMBLEM OF THE CAMPAIGN AGAINST TUBERCULOSIS

At the time of the crusades. Godefroy de Bouillon, Duke of Lorraine, had placed the Double Red Cross on his standard when he took possession of Jerusalem in 1099, and after his return to France, it became the emblem of the House of Lorraine.

The Double Red Cross was considered singularly appropriate as the rallying sign for the crusade against the most deadly Scourge Tuberculosis - which afflicts mankind. Proposal for its adoption as the International Emblem of the campaign against tuberculosis was moved by Dr. Serson, on October 23, 1902 at the International Tuberculosis Conference in Berlin. The proposition was adopted unanimously.

The Council of the International Union Against Tuberculosis, Paris in September, 1928, decided that National Associations which are members of the Union should adopt this emblem with a recommendation to the effect that it be legally registered in order to prevent its use for commercial purposes.

In 1957, the Tuberculosis Association of India requested the Ministry of Commerce and Industry, Government of India, to patent the Double Barred Cross in favour of this Association and against fraudulent use of this emblem by others. The Central Government by the notification No. 4 (3) - TMP/57, dated 13th July, 1959, included in the section of the emblem and Names, the Double Barred Cross as the emblem of the Tuberculosis Association of India.

DO YOU KNOW ?

Tuberculosis is an infectious disease and still a major public health problem. Four out of 1,000 persons are suffering from infectious tuberculosis disease, coughing out tubercle bacilli. About 5,00,000 persons die of tuberculosis in our country every year. Persons with cough, chest pain, fever for more than 2 weeks with or without haemoptysis may be suffering from tuberculosis. Finding tubercle bacilli in sputum establishes diagnosis. All Tuberculosis cases are curable if properly treated. Most of them need not be hospitalised for treatment. Treatment is much simplified by giving standard chemotherapy regimens which are very effective. Tuberculosis cases must never be treated with single drug. Infectious cases can be rendered non-infectious within a short time by giving short course regimens of 6-8 months. These regimens are capable of killing the three sub-populations of tubercle bacilli.

Government of India supplies anti-tuberculosis drugs including injection and short course drugs free of cost to the States.

With adequate, regular chemotherapy, prescribed duration of treatment and patient compliance, almost all patients can be cured.

The National Tuberculosis Programme (NTP) was evolved by the Government of India to tackle the problem of tuberculosis in the year 1962. The NTP finds the sick, treats the patient, restores him to useful life, prevents spread of the disease, keeps the family together. Today it has 371 District Tuberculosis Centres providing leadership and managerial support with a net work of more than 14,000 rural and urban health centres, dispensaries, hospitals rendering anti-tuberculosis services throughout the country. Casefinding activities in the Peripheral Health Institutions have increased from 31% (1978) to 51% (1988).

Reproduced from NTI Bulletin.

TUBERCULOSIS SEAL CAMPAIGN - ORIGIN AND GROWTH

ASHOK SACHDEVA*

The annual TB Seal Campaign, introduced in India in 1950, serves as an important and powerful impetus to the activities of our TB Associations. The Campaign helps to raise funds for promoting voluntary anti-TB work in the country and provides opportunities to every citizen to contribute to the fight against Tuberculosis. It also helps to arouse consciousness among the public about the tuberculosis problem. In fact the TB Seal Campaign has been the one single all India effort aimed at involving the people in the anti-TB movement and ensuring their full participation in implementing the National Tuberculosis Conttrol Programme.

The Story of the TB Seal

A kindly man named Einar Holboell worked in post office in Denmark. Once while sorting heavy Christmas mail in 1903, he noticed some children limping across the road. He was extremely moved by the sight of these children who were suffering from tuberculosis of the bone. It hurt him to see the suffering caused by sickness and he wished he knew something to do about it. A thought struck him.

"If we could get people to buy a special Christmas Seal while the spirit of giving is strong during Christmas, it would be wonderful. There are so many letters and packages, and just a penny seal on each one would bring a lot of money to help the sick and needy children. There might even be enough to start a hospital for children."

The idea of Einar Holboell was received enthusiastically by the Danish people. The King of Denmark gave his approval. This was how the first Christmas Seal appeared in 1904 with the Patronage of King Christian. The Seals had on them Queen Louise's picture and all Christmas letters carried a 2-ore Christmas Stamp. The Dan-

*Secretary General, Tuberculosis Association of India, New Delhi.

ish people participated in the first campaign by using an average of two stamps per person as extras on their Christmas mail. The first hospital for children in Denmark was build out of the returns of this Campaign. The sale of Christmas Seals for collecting funds for anti-tuberculosis work was soon taken up by other countries and today almost all National TB Associations are collecting large sums of money through this Campaign. Holboell, who died in 1927, was happy to see his idea prosper and grow in other countries while he was still alive. Thus, the idea of the Danish Postal official provides succour to millions of TB sufferers all over the world.

TB Seal Campaign in India

A proposal to introduce the TB Seal to raise funds for anti-tuberculosis work in India was first considered in 1944, but it has to be deferred for the duration of the War. Conditions in the country during the post-war days were also found unfavourable for embarking on such a new venture. The tuberculosis Association of India adopted the proposal in October, 1950, almost half a century after Einar Holboell conceived the idea. The Government of India permitted the Association to conduct the campaign every year from 1950 onwards.

In India, we do not call the Seal the "Christmas Seal" as is being done in other countries, as Christmas is not the only festive occasion in our country. Other festivals like Dussera, Puja, Diwali, Id etc. are equally important and in a secular State like India, emphasis on any particular festival was not considered desirable. Therefore, the Tuberculosis Association of India decided to name the Campaign, "The TB Seal Campaign" and chose for it the season which is likely to cover some of the important festive occasions. Starting on 2nd October-Gandhi Jayanti Day-the Campaign terminates on another important day for the Association, i.e. 23rd February, the Foundation Day of the Association. During the intervening weeks the people of India celebrate most of their important festivals. On these occasions the Association appeals to the people to remember that they have a duty towards their brethren stricken with tuberculosis and as a token of their sympathy for the cause requests them to purchase TB Seals. A TB Seal costs Re. 1 only.

Message of the TB Seal

The TB Seal conveys the message that tuberculosis is preventable and curable and that its vic-

tims can, if diagnosed early and treated properly be restored to normal life. The Campaign is inaugurated in the capital by the respected President of India and in the States by Governors/Ministers/other dignitaries. In special messages issued on the occasion, they appeal to the people to buy TB Seals in large numbers and help fight tuberculosis in our country.

Organisation of the Campaign

The Organisation of the TB Seal Campaign in India is the joint responsibility of the Tuberculosis Association of India and its affiliates in the States. There are now 25 State TB Associations and 2 Seal Sale Organisations. While the Central Association supplies the Seals and propaganda material, it is the responsibility of the State Associations to ensure that the seals are distributed and sold throughout the country. In this, they seek the help of their District Associations, which, in turn, receive assistance from all sections of the public including officials, non-officials, commercial organisations, voluntary agencies, medical and educational institutions, etc. They also organise local committees and enlist the cooperation of various bodies like Rotary Clubs, Lions, YMCAs, YWCAs, etc. for the sale of seals.

The seal campaign provides the much needed additional finances for propaganda and other essential activities. The Associations have now become more active and their organisational set up has considerably improved They have been able to mobilise individuals, welfare organisations, educational institutions, rotarians, commercial and industrial concerns, railways and State Governments in the Campaign.

Theme/Designs

The subjects of the Indian Seals, atleast for the last several years have been varied from handicrafts, classical Indian dances, Indian flowers to wild animal, historical monuments, masks, railway engines and vintage cars.

Interest in Foreign Countries

Indian Diplomatic Missions accredited to countries all over the world take considerable interest in selling our TB seals and have contributed considerably to our seals funds. As a result of their sustained efforts our seals have become quite popular in other countries and there is an increasing demand for exchange of seals.

Seal Collections

It is gratifying to record that most of our state Associations have taken keen interest in the seal campaign and the collections have shown considerable improvement during the last few years. Our Associations still have to strive hard and see that the seal consciousness penetrates deep into our rural areas, influences the society as a whole and the message that tuberculosis is preventable and curable reaches every nook and corner of our country.

Utilisation of Collections

After meeting the expenses connected with the organisation of the campaign, including cost of seals and propaganda materials, the State Associations are utilising the money mainly on health education, promoting domiciliary services, assisting needy patients, organising TB shibirs, seminars, conferences, postgraduate refresher courses, etc. Some states have also put up a number of TB wards in general hospitals, and provided essential equipments such as X-rays microscopies, mobile vans, etc. By and large the funds are utilised for promoting anti-TB work.

TAI Awards

With a view to creater better interest and enthusiasm in the campaign, the Association has instituted awards of Shields, Cups and Merit Certificates to State Associations for highest collections and outstanding activities. The spirit of competition fostered by these awards have resulted in better performances by most of the States. Some of the State Associations have also instituted trophies, shields, medals and prizes as incentives to those who make large collections from within the State.

To sum up, Tuberculosis Associations in many countries organise seal campaigns primarily for fund-raising. In India the campaign apart from fund raising, constitutes the main plank of voluntary work. It enables every citizen to associate himself with the movement against a powerful public health enemy. Further it is a matter of great satisfaction that his campaign has helped to build up a considerable volume of public opinion in favour of the anti-TB movement in India and it has been responsible for enlisting the continuous support of all sections of the community.

CONTROL
TB

* Make people aware of the disease
* Get TB Detected by sputum examination and X-ray of the Chest.
* Get treated and cured at the earliest.
* Use handkerchief while coughing and sneezing.
* Do not spit here and there. It is an Air borne disease but no longer a dreadful one.

THE TUBERCULOSIS ASSOCIATION OF INDIA
3, RED CROSS ROAD, NEW DELHI-110 001.

The President, Shri R. Venkataraman, inaugurated the 42nd TB Seal Campaign at Rashtrapati Bhavan on 2nd October, 1991, on Gandhi Jayanti Day

The President, Dr. Shanker Dayal Sharma, inaugurated the 43rd TB Seal Campaign at Rashtrapati Bhavan on 2nd October, 1992, on Gandhi Jayanti Day

The respected Rashtrapatiji, Dr. Shanker Dayal Sharma inaugurated the 44th TB Seal Campaign at Rashtrapati Bhavan on 2nd October 1993, on Gandhi Jayanti day

TIDE AND TIME TO STEP FORWARD TO TUBERCULOSIS CONTROL

by
DR. P.K. SEN
President
The Tuberculosis Association of India

Tuberculosis Control had been defined by WHO in its 8th Expert Group as - When the infection rate reaches 1% the age group of 14 years, then the disease should be regarded as Controlled and the few cases remaining in the communities can be handed over to the General Public Health Services and the special CONTROL PROGRAMME MAY WITHDRAWN.

This Definition has 2 parts of Action, namely,

1. Continued determination of Infection rate
2. Total Stop of the Control Programme.

I agree with the former but not exactly with the latter. To do so will require adequate development of the infrastructure, atleast of the General Public Health. Personally I do not think we have this condition yet. HEALTH FOR ALL AT THE END OF THIS CENTURY attempts to achieve this position. Satisfactory development will be very helpful to Tuberculosis Control also, but we should wait and see. Cooperate with the movement as much as possible, but not of amalgamation. We should continue our NATIONAL TUBERCULOSIS CONTROL PROGRAMME. START GETTING NECESSARY INFORMATION TO STEP FORWARD TO CONTROL. In doing so, we have to accept 2 factors which are beyond our control, but most important for decline of the disease.

The Factors Are -

1. Standard of living
2. Herd Resistance

1. Standard of Living

This is a complex condition judged by Nutritional status, Housing and Sanitary conditions and a number of other factors. I do not think that Tuberculosis can ever be controlled under bad standard of living. Even if it is controlled, it will revert back in no time. Every where Tuberculosis declined quickly with

the improvement of the standard of living.

2. Herd Resistance

A Natural phenomenon, shown conclusively by Prof. Cumins David Davies, Professor of Tuberculosis and my Teacher, in the African population recorded in his book, NATIVE TUBERCULOSIS, that the diseased takes a very toll initially in the VERGIN SOIL and as the susceptible are gradually eliminated the diseased meets harsher headings and morbidity rate gradually falls. An EPIDEMIOLOGICAL CURVE will show gradual rise in the morbidity till the disease is suitably distributed all over the country.

THE MOST CREDITABLE STUDY BY THE TUBERCULOSIS ASSOCIATION AIDED BY I.C.M.R. showed that the disease is almost equally prevalent in the urban and rural areas. A finding which laid the PLANT OF THE NATIONAL TUBERCULOSIS CONTROL PROGRAMME DESIGNED BY THE NATIONAL TUBERCULOSIS INSTITUTE that the expected phenomena had already started which are indicated by the-

1. THE FALL IN THE TUBERCULIN REACTORS IN THE YOUNGER AGE GROUP IN MILLION PRE-BCG VACCINATION TESTS AROUND 1960 the Direct vaccination started as recorded in VADEMICAM - a Government of India publication.

2. National Sample Survey also showed that the Prevalence of the disease is more than 10 times higher in the older age-groups than the younger indicating it is likely that the POTENTIAL OF INFECTION, that is, the number of infectious cases is diminishing in the communities. I have always said that when the disease is associating much more with the old, the disease became old and will start declining.

I, THEREFORE, ACCEPT THAT THE HEAR RESISTANCE IS OPERATING TO OUR ADVANTAGE AND THE DISEASE IS ON THE DECLINE.

Both these factors-Standard of Living and Herd Resistance are beyond our power to control and I will not discuss them any more.

Specific Measures

In this area only the National Tuberculosis Control Programme will be considered and there again the most important Measure - the DOMICILIARY CHEMOTHERAPY WILL BE DISCUSSED VERY BRIEFLY retrospectively and prospectively.

Retrospect - There are about 10 million cases according to the National Sample Survey and around 40 thousand beds. THAT HOME and HOSPITAL treatment with adequate and appropriate chemotherapy can have almost equal result was also accepted by the International Union

Against Tuberculosis around that time. I had the fortune and misfortune to chair the Technical Committee which scrutinized this important issue. THE Great MISTAKE WE HAD COMMITTED WAS THAT WE CONSIDERED STUDIES ONLY FROM WORKING FIELDS OF INSTITUTIONS. We failed to realise that in the Rural areas where 75 percent of our cases reside cannot have proper chemotherapy and technical capacities. The result of this grave mistake costs us dearly in IRREGULAR CHEMOTHERAPY with serious disadvantages that follow. REMEDIAL MEASURES need Cooperative Pilot studies with Modified Drug regiment in the rural unused fields within our own capacity but not by excessive Foreign Aid.

Approach to Control

I think our Public Health Infrastructure is not strong enough to accept tuberculous cases. Before we entrust it to this job, we should make FEASIBILITY STUDIES. I suggest the following steps-

1. To keep track of the infection - rate at the age-group of 14 years by a Cooperative study.

2. Step for COOPERATION - At around 10 percent infection rate - NTP should run in close cooperation with the General Public Health and start handing over gradually to them subjects like - Drug supply, Home supervision, Public education for People's participation, etc.

STEP - Step of INTEGRATION - Around the Infection rate of 5 percent Gradually Surrender the other NTP RESPONSIBILITIES BUT RUN SIDE BY SIDE AS ADVISER AND

Step of WITHDRAWAL - at 1.00 infection rate - Abandon NTP and hand over the rest responsibility to General Public Health.

Hospitals and Research Institutions

These Institutions should not be liquidated till a time comes-decided by the events that may follow.

Participation of General Practitioners

Atleast half of the case in the known pool are in the hands of the General Practitioners. Control will be a far cry if this area could not be tackled successfully. I had suggested under-graduate training. Direct supply of drugs to the G.P. and make a pilot study. Intermediate Clinics for diagnosis and drug supply, etc. All these steps may seem theoretical and difficult to take. But from my limited experience, I think with proper Planning and Organisation the actions required will be easy.

A BRIEF REVIEW OF THE ACTIVITIES OF THE TUBERCULOSIS ASSOCIATION OF INDIA

ASHOK SACHDEVA*

You will agree that the role of voluntary organisations in dealing with any public health problem, specially like Tuberculosis, cannot be over-emphasized. The first organised and concerted effort to combat Tuberculosis in India was the establishment of the Tuberculosis Association of India in February 1939. Consistent with its status of National Voluntary organisation, the Association has spared no efforts during the 55 years of its existence, to help intensify the anti-TB movement and supplement and complement governmental endeavors in implementing the National Tuberculosis Control Programme. In this, the Association is assisted by 25 State TB Associations which re affiliated to it and over 300 District TB Associations, which, in turn, are affiliated to the State TB Associations. The Association works in close cooperation with the Ministry of Health and the Directorate General of Health Services of the Government of India. Similarly, the State TB Associations also work in close cooperation with the Health Departments of their respective Governments.

The main object of this Association is prevention, control, treatment and relief of Tuberculosis. With the advent of specific, potent and effective drugs available for the treatment of tuberculosis, the emphasis is now laid mainly on early diagnosis and proper treatment. The New Delhi TB Centre managed by the Tuberculosis Association of India did the pioneering work in establishing the efficacy of home treatment for tuberculosis. This ultimately led to the formation of a National TB Control Programme which is acclaimed all over the world. Despite all efforts and spectacular advances in the medical sciences, tuberculosis paradoxically continues to be one of the major public health problems in our country. This is largely because of the ignorance and superstitious beliefs of the common man. Therefore, we have now been focussing our attention mostly on health education to create an awareness in the public about tuberculosis and to remove misconceptions and superstitious beliefs that are still highly prevalent. Keeping these in mind, the Association has brought out health education material like films on tuberculosis, educational posters, cinema slides, rexine scrolls, flip books, school-health brochures, etc. in English, Hindi and other regional languages. These are widely distributed through the State TB Associations, other voluntary organisations, State Governments and also to individuals to bring about awareness on the subject.

Secretary General, Tuberculosis Association of India

Annual National Conferences

An important and regular programme of the Association is the organisation of annual conferences for Tuberculosis and Chest Diseases Workers to keep abreast of the latest developments in anti-TB work, and the last in the series was held at Bhopal in December, 1993. The Conference was inaugurated by His Excellency Shri Mohammed Shafi Qureshi, the Governor of Madhya Pradesh. 42 scientific papers were presented in addition to two prestigious orations and panel discussions. The Governor presented the various awards of the TAI to the recipients and the special souvenir was released on the occasion. Important meetings of the Standing Technical Committee and the Secretaries of State TB Associations were held during the periodicity of this Conference.

These annual conferences on Tuberculosis and Chest Diseases have been recognized as one of the best medical conferences in the country. Besides the usual rich fare of interesting papers, there are generally two prestigious orations, panel discussions and special sessions on current problems like HIV and Tuberculosis. The deliberations of these conferences substantially contribute to the National TB Control Programme in the country. Recommendations arising out of the presidential address are forwarded to the Government.

The 49th National Conference is being held at Pondicherry from 6th to 9th October, 1994.

Annual TB Seal Campaign

Another important and powerful impetus to the activities of our TB Associations is organisation of the annual TB Seal Campaign. The Campaign helps us to raise funds for promoting voluntary anti-TB work in the country and provides opportunities to every citizen to contribute to the fight against tuberculosis. It also helps to arouse consciousness among the public about the tuberculosis problem. In fact the TB Seal Campaign has been the important all India effort aimed at involving the people in the anti-TB movement and ensuring their full participation in implementing the National TB Control Programme. Needless to say, the State Associations have now become more active and their organisational set up has considerably improved due to the much needed additional finances received from the collections of the Seal Campaign. It is, thus, certain that the TB Seal Campaign has built up an indomitable public opinion in favour of awareness about tuberculosis as it serves the said twin objectives. The 44th TB Seal Campaign 1993 was inaugurated at Delhi by the respected President of India on 2nd October, 1993 at the Rashtrapati Bhavan, when the new TB Seals depicting the motifs of vintage cars of India, were presented to him by the Chairman TAI (Directors General of Health Services, Government of India), Dr. A.K. Mukherjee.

Fund-Raising-Cum-Health Education Campaign

Another very important and one of the worthwhile and meaningful activities, which has been accorded top priority and due importance and has been taken up on a war footing in an aggressive and vigorous manner, is the fund-raising-cum-health education campaign to make the Association self-supportive and self-sustaining. I am glad to say that through hard work, vigorous efforts, intelligent planning, the Association has been able to muster, in a short span, sufficient donations which helped in stabilising the financial position of the Association.

Additional Funds : Special Souvenirs etc.

For additional resources, the Association brought out a special souvenir at the time of the inauguration of 42nd TB Seal Campaign on 2nd October, 1991, which contained inspiring and encouraging messages from the high dignitaries, meaningful, educative, informative articles on different aspects of tuberculosis and advertisements and we were able to receive advertisements worth over Rs. 2 lacs. Hopefully such a Souvenir would be planned again in 1995 after the success of the present Special Souvenir 1994, on the occasion of the 45th TB Seal Campaign - 1994. These are special souvenirs because they serve a multi-purpose cause. The special Souvenir not only mobilises funds for general activities of the Association, but also provides awareness on health education and propagates and promotes the TB Seal Campaigns. It is a very special activity. The Souvenirs in the recent past have been well received and appreciated.

Contributions of Indian Missions Abroad

Our diplomatic missions abroad continue to assist the Association in popularising our TB Seals in the countries where they represent our country. Collections made by the Indian Missions in respect of the 43rd Campaign have amounted to over Rupees one lac approximately. Our TB Seals are also in constant demand by the various National Associations and individuals in other countries and many Associations abroad exchange their seals with ours. In fact our TB Seals won the international award being placed at the second position for the seals depicting 'Brides of India' brought out on the occasion of the 42nd TB Seal Campaign. This has been a matter of pride for the Association.

Publicity Cum Health Education Awareness Campaign

The Campaign was launched to propagate the TB Seal Campaign and to bring about awareness in the masses on the problem of tuberculosis. The Campaign conveyed the message that facilities are available under the National Tuberculosis Control Programme to combat Tuberculosis.

Suitable advertisements and insertions were published on the aspects of the disease, its cure and facilities available for diagnosis and cure, etc.

Active contribution of the media, specially the newspapers including the regional newspapers and vernaculars, and cash donations for the purpose were received.

Research Activities

The Association started its research programme/activities in 1975 with the twin objectives of (1) conducting original studies in respect of short course chemotherapy, operational aspects and allied problems, etc. and (2) to inculcate a spirit of enquiry and research among the young workers and to raise the standard of scientific work in the country in its own humble way. The Research Committee ensures and monitors series of cooperative studies on various aspects of tuberculosis. The Committee, of late has been endeavouring to help develop the research potential in the country by locating yound researchers who are holding institutional positions and are interested in doing better research. The Association sponsored 3 research workers to national TB Institute, Bangalore for learning the basics of research methodology by attending a Four Week Seminar to serve as a pilot experience. The matter is being coordinated with the Director, NTI, Bangalore in this regard.

The specific aim has been to encourage the researchers to come up with proper research proposals and follow a proper research methodology. During the period, as many as four research proposals were approved and sponsored. The Association will continue to encourage the young research workers towards financial support and guidance in the respective areas.

Health Visitors Course

Besides sponsoring various research studies, the Association also conducts its annual TB Health Visitors course at the New Delhi TB Centre. The course which has come to become popular, broadly has the following as subjects in its contents :

1. Tuberculosis, General and Public Health Nursing
2. Hygiene and Communicable Diseases
3. First Aid and Home Nursing
4. Anatomy and Physiology
5. Social Welfare, Nutrition and Dieticks
6. Health education

The candidates are drawn from different states on selection basis.

During the year 1993, 22 candidates were selected to undergo the health visitors' course. During 1994, 21 candidates have been selected for this course.

The Quarterly Technical Journal

The Indian Journal of Tuberculosis, a quarterly publication, has completed 40 years of useful service to the medical profession. The Journal is the official organ of the Tuberculosis Association of India and is the only Journal devoted exclusively to tuberculosis in our country. It covers epidemiology, diagnosis, treatment, prevention and control of tuberculosis

as well as related mycobacterial chest diseases, etc. It contains papers, mostly based on research done in India, review articles by eminent authors, case reports and abstracts of important papers published in other journals.

The July issue of the Journal is devoted to orations and selected papers presented at the Annual National Conference on TB and Chest Diseases, as also summaries of the remaining papers. In addition reports on related national Conferences and International Conferences, book reviews and News & Notes relating to developments in the field of tuberculosis are also published in the Journal. There are periodic reviews of the progress under the National Tuberculosis Control Programme in India. The Journal has a good circulation among TB institutions in the country, Medical Colleges & Libraries, TB Specialists in India and abroad, as well as General Practitioners.

Several new features have been introduced during the period, viz. Forum, Leading Articles and Contemporary Issues and other materials of interest to tuberculosis workers. This has enabled the Journal to maintain its high scientific standard. The coloured advertisements have added to the get up and revenues of the Journal.

Other Publications

The Association published in 1972 a comprehensive Text Book on Tuberculosis in order to meet a long felt need for such a book by specialists in India. The Second Edition of this Book was brought out in 1981. The third edition of this book is contemplated.

In 1971 the Association published a Blue Print for Tuberculosis Work in India based on the 8th Report of the WHO Expert Committee on Tuberculosis. This Blue Print was revised two times subsequently.

Another publication of the Association authored by Dr. S.P. Pamra, Ex-Honorary Technical Adviser of the Association is the Hand Book of Tuberculosis. This book covers, in simple language, the essential facts about the clinical, epidemiological and public health aspects of the disease and lays special stress on aspects concerning nurses, health visitors, social workers, etc. in their day to day work.

The Association has also recently revised its brochure "Lectures on Tuberculosis for general Practitioners" authored by our Ex-Honorary Technical Adviser, Dr. S.P. Pamra.

Launching of Special Programmes

The Association takes up various important projects and health education programmes from time to time. After the success of the USAID Project on Expanded Programme of Health Education and Community Involvement in the National Tuberculosis Programme, the Association launched on 22nd February, 1992 an intensive tuberculosis programme in Delhi on experimental basis, thereby intensifying Anti-TB drive from February 24, 1992 in Delhi, so that from the experience gained, the other states could emulate the example. The programme is aimed at:

(i) creating awareness in the community on the tuberculosis programme and ensure their involvement

(ii) to step up active case-finding in the slums

(iii) organise, coordinate and enlist the help of other voluntary organisations, specially in case-finding, identifying unknown cases in the community and drug distribution to the patients more conveniently

(iv) Fund raising drive and to make public aware of the work being done by the Association.

The programme was reviewed currently in terms of the strategy of the revised National Tuberculosis Control Programme.

The Delhi TB Association and the New Delhi TB Centre are actively associated with this Programme.

Workshop on the Involvement of NGOS in the Revised National Tuberculosis Control Programme

A two days' workshop was organised on 23rd and 24th December, 1993 in the Tuberculosis Association of India by the Directorate General of Health Services, Government of India on the involvement of NGOs in the revised National Tuberculosis Control Programme of the Government. The workshop was well attended represented by prominent NGOs and representatives of some State TB associations and senior TB workers and functionaries of the Association.

Anti TB Week

The Tuberculosis Association of India observes its annual Anti-Week from 17th to 23rd February. On the occasion, apart from collections of donations, health education material is distributed to the general public by the staff of the association. The State affiliates also observe the anti TB week in a similar manner.

International Contacts

The Tuberculosis Association of India is one of the earliest affiliates of the International Union Against Tuberculosis and Lung Disease and has been working in close cooperation with them. It is also working in close cooperation with the international agencies like the WHO, UNICEF, etc.

World Bank Delegation

A World Bank Delegation visited the TAI in June 1994 when they familiarised themselves with the activities of the Association, in specific on health education. They found the health education material meaningful and informative.

Assistance to Patients

The Association, as usual, assisted patients with small cash grants from its funds. Assistance was restricted to cases requiring immediate help or for travel and incidental expenses of indigent patients stranded in Delhi. Several patients who asked for assistance in their hospitalization and treatment were recommended to the concerned state Associations and to various TB Institutions for help.

INTERNATIONAL UNION AGAINST TUBERCULOSIS AND LUNG DISEASE
UNION INTERNATIONALE CONTRE LA TUBERCULOSE ET LES MALADIES RESPIRATOIRES

SEAL CONTEST
CONCOURS DE TIMBRES

At its Annual Meeting held in Paris 1992 *the IUATLD granted*
Lors de sa Réunion annuelle à l'UICTMR a décerné

the / le 2nd PRIZE / PRIX

to / à Tuberculosis Association of India

THE PRESIDENT OF THE IUATLD
LE PRÉSIDENT DE L'UICTMR
R. Ferlinp

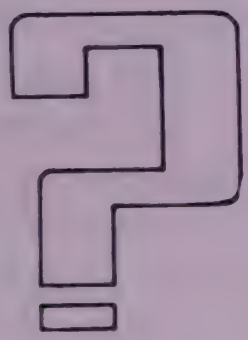
THE CHAIRMAN OF THE EXECUTIVE COMMITTEE AND COUNCIL OF THE IUATLD
LE PRÉSIDENT DU COMITÉ EXÉCUTIF ET DU CONSEIL DE L'UICTMR
John O'Murray

THE CHAIRMAN OF THE FUND-RAISING COMMITTEE
LE PRÉSIDENT DE LA COMMISSION DE COLLECTE DE FONDS

Recognition of our TB Seals at International level

The Tuberculosis Association of India has been awarded the 2nd prize at the International level by the International Union Against Tuberculosis and Lung Disease, Paris for the TB Seals of its 43rd TB Seal Campaign depicting the 'Bridges of India'.

What You should know about Tuberculosis



THE DREADED SCOURGE-TB

TB-IN AFFLUENT COUNTRIES

Tuberculosis, a dreaded infectious disease, was a major public health problem in almost all the countries of the World. During the last fifty years, the technically advanced countries achieved spectacular success in the control of this killer disease, because of major strides in chemotherapy, large army of qualified manpower to handle this programme and enormous financial resources.

TB IN DEVELOPING COUNTRIES

Unfortunately, the epidemiological situation of this disease in most of the developing countries is a bit alarming, in spite of significant advances in the diagnosis and treatment of this disease. In fact, there has been an overall increase in the morbidity rate in the developing and under-developed countries because of one single factor-the population has doubled in the developing countries during the last four decades.

"PLEASE JOIN HANDS IN OUR MASSIVE FIGHT TO DEFEAT AND CONTROL TB"

LAND MARKS IN THE HISTORY OF TB

During the first half of this century, tuberculosis was considered to be a messenger of death. There was no specific treatment for this disease. Millions of people who contracted this disease succumbed to it. Today the picture is different. Specific treatment is available to treat tuberculosis. Drugs have been discovered which are remarkably effective against tuberculosis. These drugs revolutionised the methods of treatment, transformed the fatal character of this killer disease and gave a new lease of life to the suffering community.

Similarly, another land mark in the treatment of this disease is the advent of domiciliary treatment. The self-administration of oral drugs by the patients themselves proved conclusively that domicialiary treatment is as effective as the traditional method of treatment in a hospital or sanatorium.

TB IN INDIA

The main problem facing the developing countries today in the control of tuberculosis, is not the need for new regimens of treatment or new drugs, but how to administer, and apply successfully these innovations.

Let us candidly examine the current status of the disease in our country. We have made enormous progress in industrial growth and self-sufficiency in agriculture. Our achievements in science and technology are spectacular. We have been giving technical assistance to a large number of developing countries in every walk of life. Even some of the developed countries are envious of our achievements.

The first scientific study on domiciliary treatment was conducted in India by our New Delhi T.B. Centre which paved the way to evolve a sound and technically feasible National Tuberculosis Control Programme in our country. Even the WHO policy on this programme is based on the principles of our National TB Control Programme. In spite of all these achievements, it is a pity and a paradox that Tuberculosis continues to be a major public health problem in our country. It is estimated that about twelve million people are suffering from this disease at any point of time. Twenty five percent among them are infectious and spreading this disease to their kith and kin and to the community.

Our technology, our technical resources and our health manpower handling this programme are in no way inferior to those available in the advanced countries, which have achieved a breakthrough. But our performance

in controlling this menace is far below our expectations Why?

The following two major deficiencies are held responsible for the shortfall in our achievements:

* Poor participation of the people in the implementation of the programme in both, urban as well as rural areas.
* The high percentage of illiteracy and stark ignorance among the people about the ravages of this disease.

What is the solution? The solution lies in education, educating ourselves, educating the illiterate and the ignorant about the deadly profile of tuberculosis, so that we protect, ourselves, our kith and kin and the community and fight this scourge individually and collectively.

THE LEGEND ABOUT TB

For centuries, the literate and the illiterate, the rich and the poor believed that tuberculosis is hereditary and runs in the family. Because of this belief, the patients carried a stigma and they were scared to disclose this disease to the community.

A breakthrough came on the horizon in the year 1882. Robert Koch, an eminent German Scientist discovered that the specific cause of tuberculosis was the "Tubercle Bacilli" a micro-organism, which could be seen only in a microscope. This discovery dispelled all age old beliefs and theories.

HOW DOES TB SPREAD

Tuberculosis does not respect age, sex or socio-economic status of its victims. The tubercle bacilli primarily attacks the lungs, although almost all organs in the body can be involved. It is the patient suffering from "Tuberculosis of the Lungs" Who spreads the infection. When this patient coughs or sneezes, without covering his mouth, tiny particles of sputum called "Droplets" or droplet nuclei are expelled like a spray. These tiny particles carry the tubercle bacilli. They remain suspended in the air for a long period when a healthy person in the vicinity inhales these particles, the tubercle bacilli gains entry into his lungs.

A person suffering from tuberculosis may also spread the infection by indiscriminate spitting, spitting any where and everywhere. The dried particles of his sputum, ultimately, form part of atmospheric dust. This may be inhaled or injested with food. A healthy person thus gets infected.

Smoking from a common "Hooka" is a social custom in some parts of the country. This custom is also a source of infection.

An ignorant mother, who is suffering from tuberculosis, may directly transmit this disease to her healthy child when fondling or kissing. The disease does not always follow the entry of the bacilli into the lungs. The incubation period from infection to onset of the disease, may be weeks or years. Once infection takes place, the body's defence mechanism is set in motion. The mechanism fights the bacilli and keeps the infection at bay. If the body's defence is poor or there is further invasion of the bacilli, the infection may transit into the disease stage. It is only in about five percent of the people whose defence mechanism is poor, the bacilli multiply rapidly and cause the disease.

SIGNS AND SYMPTOMS OF TB OF LUNGS

In the early stages, the signs and symptoms of lung tuberculosis are very vague and mild.

* It may be loss of weight
* The patient looks tired, exhausted
* He has no appetite for food
* He has no inclination or stamina for work
* He may be suffering from mild fever and persistent cough.

Most of these symptoms are common to many other diseases as well. Some patients may also develop chest pain and others may complain of blood stained sputum. If these symptoms persist for 2-4 weeks, the patient should go to the nearest **Health Centre** or **Hospital** or **District TB Centre** immediately for check up as the infection may be T.B. Not only these services are free but the drugs are also given free.

DIAGNOSIS OF TB OF LUNGS

The diagnosis of lung tuberculosis is based mainly on examination of the sputum of the patient. Some times an x-ray examination of his chest may also be required.

Every patient, who is suffering from persistent cough for 2-4 weeks, should get his sputum examined under the microscope. If the sputum shows the presence of the tubercle bacilli, it confirms that he is suffering from tuberculosis of the lungs.

If the sputum examination does not reveal the presence of the tubercle bacilli, it does not mean that he is not suffering from this disease. Sometimes, the baiclli are very few in the sputum, and they can escape detection. In such cases, further diagnosis is made by x-ray examination of the chest.

Another diagnostic tool is the tuberculin test. However, this is more applicable in the case of children. If a child below three years is found to be

positive for tuberculin test, it is an indirect evidence of an active tuberculosis lesion in the body, even if there are no other signs and symptoms. The child should be treated. But a positive tuberculin test in the case of adults is not of much help since the infection is not always followed by disease.

TREATMENT OF TB OF THE LUNGS

The discovery of powerful drugs, effective in treating this disease, constitutes a milestone and one of the major medical advances of the century.

The patients do not have to languish in hospitals and sanatoria. There is no need for extra nutritious diet or special food or tonics or absolute bed rest. They can be treated at home in the family environment, as effectively as in a hospital or sanatorium.

The patients treated at home should take the drugs regularly and as long as advised by his doctor. They should visit the health centre or hospital regularly every month for drug collection and periodical check up.

The patients who take drugs regularly, in prescribed doses under doctor's advice, do not pose any danger to their family. Therefore, they do not need isolation even in their own home from their family.

DURATION OF TREATMENT OF LUNG TB

The nature of this disease is very peculiar. The symptoms disappear within a few weeks of taking the treatment, because of the effect of powerful drugs. The cough disappears. The temperature gets normal. The patients' appetite improves. Likely, his weight may also increase. The patient thinks that he is cured of tuberculosis and discontinues the treatment on his own. It is at this stage that the patient commits a great blunder.

Relief from symptoms does not mean that he is cured. The patient should continue taking the drugs regularly, in proper doses and without break. The doctor alone should decide the duration of the treatment. The duration according to the drug regimen varies from 6-12 months in normal cases and may extend to about 18 months in a few patients. The duration of the treatment is the same whether the patient is treated in the hospital or at home. Patients discharged from the hospital must complete the remaining period of treatment with drugs at home. Incomplete or irregular treatment or discontinuing the treatment against doctor's advice may be dangerous, to the patient himself, his family and to the community.

TUBERCULOSIS IN CHILDREN

In a big country like ours, with a large number of TB patients living in crowded and congested localities in both urban and rural areas, the risk of infection is immense and starts as soon as the child is born. Therefore, they need special care. Children should be immunised against Tuberculosis by BCG vaccination. BCG vaccination, early in life, provides a high level of protection against tuberculosis. It is safe even to the new born.

BCG vaccination facilities are available throughout the country at all health centres, maternity hospitals and TB clinics. It is given free.

PREVENTION OF TB OF LUNGS

During the early years of this century, tuberculosis was one of the most expensive of all diseases for diagnosis and treatment. The victims of this disease were a burden to the family and to the community. The worst part of it was, the TB patients were spreading the infection as long as they lived.

The picture is totally different today. Tuberculosis can not only be cured today completely but also the spread of infection can be prevented.

Prevention of tuberculosis is the concern and responsibility of the entire population.

The Government of India, the State Governments, voluntary organisations together have been fighting a relentless battle against this disease right from the year 1962 when the **National Tuberculosis Control Programme** was launched. Howsoever sound and scientific a programme may be, it cannot be a success unless the people:-

(i) understand and accept it wholeheartedly as their own;
(ii) make use of the services and facilities available at their doorsteps and
(iii) participate in the implementation of this National TB Control Programme.

HOW CAN PEOPLE PARTICIPATE IN THE TUBERCULOSIS CONTROL PROGRAMME

Every citizen, living in the village, in the town and in the city has a vital role to play in our crusade against tuberculosis, in his own interest, in the interest of his family and community.

People could identify and educate suspected cases of tuberculosis, to go to the nearest hospital or health centre for examination of their sputum, and if necessary, for x-ray of the chest.

What are the predominant symptoms of this disease in suspected cases:

* Persistent cough for 2-4 weeks, with or without fever and
* Spitting blood tinged sputum.

If the sputum examination confirms that the suspected person is suffering from tuberculosis, he should be motivated to take drugs regularly, in proper doses and as long as he is advised by the doctor, who is treating him.

The powerful anti-TB drugs give relief from symptoms of tuberculosis within a few weeks of treatment. This does not mean that he is completely cured. The patient should be persuaded to continue the treatment, uninterrupted and until such time he is finally checked and cleared by the doctor, who is treating him.

People can prevent the spread of this disease by themselves.

The first step in the community control of tuberculosis is to **break the chain of infection**. Persons suffering from this infection should cover their mouth while coughing and sneezing.

The second very important step is observance of "**Cough Hygiene**". TB patients should spit only in spitoon or covered container and dispose off the sputum collection either by burning or burying.

From : Health Education Material of the Tuberculosis Association of India.

STRENGTHEN OUR EFFORTS TO FIGHT AND CONTROL TB

GETTING TB

Exposure

Tuberculosis infection is caused by exposure to airborne droplets containing the TB bacillus. Like the common cold or the flu, you can catch TB through relatively casual contact, though repeated exposure is usually needed. At greatest risk are those in closest contact with a victim of the disease-family members, friends, fellow employees, and those spending time with TB patients in poorly-ventilated area.

There are very few practical steps you can take to prevent exposure to TB. However, there is much that governments and health workers can do to reduce the number of people who are contagious.

Infection

1.7 billion people worldwide

Once infected with TB, you will likely remain infected for the rest of your life. Fortunately, most people never become sick. A person infected with the TB germ has a 5 to 10 percent chance of developing a full-blown case of TB in his or her lifetime.

Multidrug Resistant TB

While nobody knows for certain, it is estimated that 50 to 100 million people are infected with strains of TB that are resistant to some or all of the common TB drugs. A person infected with multidrug-resistant TB has no greater chance of becoming sick with TB than a person with a regular strain of TB.

TB & HIV Co-infection

Nearly 5 million people who are infected with TB are also infected with HIV. While this is a small percentage of all TB infections, it represents a third of all HIV-infected people. A person with both infections is at least 25 times more likely to become ill with TB, compared to a person infected only with TB.

Illness

8 million people annually

People who become ill with TB suffer from coughing (sometimes with bloody sputum), exhaustion, profuse night sweats, weight loss and chest pain. If not treated, over 50 percent of those ill with TB will

die. With proper treatment, over 95 percent of TB cases can be cured. However, your chances for survival drastically decrease if you are also infected with a drug-resistant strain of TB, or live in a country which does not have an effective TB treatment programme.

Multidrug-Resistant TB Illness

MDR TB is often incurable, even with sophisticated medical services. In most cases, treatment takes as long as two years and is very expensive. For most of the world's population, any form of MDR TB is a virtual death sentence, with only 20 to 40 percent of cases being cured.

TB & HIV Illnesses

Approximately 500,000 people with HIV are currently ill with TB. This figure is increasing rapidly, and is expected to nearly triple by the year 2000. Without proper treatment and effective drugs an HIV-infected person may often die within just weeks of being infected with TB.

Death

2.7 million people annually

Even though a cure exists, and drugs cost as little as $ 13 for a full six-month course of treatment, it is not available to millions of people, resulting in millions of unnecessary deaths each year.

Contagion

The devastating impact of TB doses not end with a patient's death. During his or her illness, the untreated patient will probably infect dozens of other people.

It you are ill with TB, there is a 50 percent chance you will infect someone if your are around them for at least 8 hours a day for 6 months.

If your are ill but taking your medicine, within 2 to 3 weeks you will no longer be highly contagious. If your are not ill with TB, but are only infected with the TB germ, your are not contagious.

People who are ill with multidrug-resistant strains of TB are no more infectious than those with a regular strain of TB. They can, however, transmit the multidrug-resistant germs to others. People co-infected with TB/HIV who develop TB are no more infectious than other TB patients. An HIV-positive individual is, however at special risk if exposed to the TB germ.

Source : TB-A global emergency-WHO Report on the epidemic (WHO-1994 : Acknowledged with grateful Thanks)

Getting Rid of TB

SUPPORT

Government Support

For the world to begin getting rid of TB, governments must be financially committed to long-term TB control, since the disease can have a lengthy incubation period and is so widespread. It is also important that governments commit to providing free TB treatment. A major reason low-income people do not complete their treatment is that they cannot afford the cost of TB drugs.

Donor Support

Foreign assistance is often essential in establishing TB control programmes, since many of the nations most devastated by TB are also the nations least able to finance effective TB control programmes. TB control should be a key element of a sound foreign assistance package.

WHO Assistance

WHO's role is to assist countries in planning and establishing effective TB programmes. Together, WHO and national health officials design plans for TB control. which are suited to the specific needs of each country. WHO also assists countries with TB research.

PROGRAMME ORGANIZATION

Clear Lines of Accountability

TB control programmes in every nation must have clear accountability from top to bottom. TB treatment guidelines must be established for health workers. A central management unit is needed to maintain a national TB reporting system and to focus supervision at each level when problems emerge.

Integration with Local Health Services

TB control should be integrated into existing health services at all levels. TB case finding, treatment and supervision of patient progress all work best when there is a strong "primary health care" system.

Trained Staff

All doctors, nurses and health care workers must be familiar with

the polices of their national TB control programme. Each district must have a health worker trained in the essential tasks of TB control.

Dependable Drugs & Supply Network

TB drugs should be available at local, regional, and national levels in each country. When treatment is interrupted because of undependable drug and supply shipments, uncured patients often proceed to develop drug resistance.

DIAGNOSIS

Passive Case Finding

In most cases, people contact a local health worker when they suffer from one of the many severe TB symptoms. It is usually not feasible or cost-effective for health workers to actively search for TB cases in the community.

Initial Examination

The ill patient's visit to the local health worker may take place at a table under a tree, a small dispensary, health centre or a hospital. The patient will be asked a few basic questions and–if TB is suspected–referred to a TB specialist who can confirm the diagnosis and start treatment.

Sputum Smear Diagnosis

To confirm whether a person has an active case of pulmonary TB, the patient's sputum–the mucus in their spit after coughing–will be examined under a microscope at least three different times to find if the patient is infectious or "smear positive." If this test is not conclusive, the patient will often be given a chest x-ray to determine whether there are any small holes, fluid or shadows in the lungs which may indicate TB, perhaps still in non-infectious stage.

Good Microscopy

Reliable microscopes are essential for diagnosing TB. medical staff must be trained to use them properly.

TREATMENT

Short-Course Chemotherapy

WHO recommends a carefully supervised six-months treatment programme for new infectious TB patients, using tablets of isoniazid, rifampicin and pyrazinamide, and ethambutol or injections of Streptomycin. To avoid multidrug-resistance some cases may be treated longer and given an additional drug.

Out-Patient Treatment

Patients should be treated on an outpatient basis rather than being hospitalized, except in the case of people who are very sick or are not near health care services. It is important that outpatients are directly observed to ensure that they actually take their drugs.

Standardized Length of Treatment

Treatment shorter than six months will result in a higher rate of relapse. Longer treatments do not contribute to higher rates of cure and only reduce patient compliance. Previously treated cases often take longer to treat as they may harbour multidrug-resistant bacilli.

Patient Education

Patients must understand why it is important to regularly take their medicine for such a long period of time—even after symptoms go away. Patients must also know how to reduce the risk of infecting others during the initial phase of their treatment.

MONITORING

Patient Monitoring

For each infectious TB case, a trained health care worker must be put in charge of seeing that the patient takes the required medicine on a regular basis. The health care worker must also ensure that the patient is examined (with a sputum check) at least three different times during the course of the treatment to be sure that the medicine is working.

Monitoring Health Workers

There must be a medical official in every district who is responsible for making sure that every health care worker is doing his or her job. This official is also responsible for ensuring that an adequate supply of TB drugs is maintained.

Recording & Reporting

WHO encourages nations to use its simple but accurate reporting system to register patient data, disease classification, patient check-ups, and treatment outcome in a special registry book. Accurate records must be kept about every TB patient in the district. At least once every three months, these records should be checked by a regional or national supervisor. Districts which are not maintaining very high rates of cure should be provided with assistance, training and supervision to solve the problems being encountered.

PREVENTION

BCG Vaccination

The BCG vaccination is recommended for children as it may prevent some serious forms of TB. However, it is known to provide only small, if any, benefit in protecting adults, even if they are revaccinated.

Quarantine Is Not Necessary

TB patients undergoing treatment can continue to eat, sleep and work with others, with some precautions. After a few weeks of treatment, TB patients are no longer able to spread the disease to other people, provided they continue to take their medicine.

Cure Existing Cases

TB is spread by people, not by insects, blood supplies or water. Specifically, TB is spread by TB patients who are not treated at all or who do not take their prescribed medicine for six months. One untreated TB case can infect approximately 10 to 14 people in a year's time. Effective treatment is important not only to cure the patient, but also to prevent ill people from spreading the infection.

Source : TB - A Global Emergency - WHO Report on the epidemic (WHO - 1994; Acknowledged with grateful thanks).

Fight Tuberculosis - control it.

Tuberculosis - no longer 'a dreaded disease'.

Tuberculosis is now preventable and curable :

Powerful and effective drugs are available for treatment of tuberculosis.

Take regularly these drugs without break as long as advised by the doctor.

Injections, hospitalisation and bed rest are not necessary in every case.

Drugs can be taken at home-no need for any special diet.

Buy TB Seals and help Fight Tuberculosis.

A TB Seal costs RE 1 only.

AIDS AND TUBERCULOSIS

DIR. (PROF.) DR. K.C. MOHANTY and
DR. SUDHIR NAIR

An Overview

In 1981, the Acquired Immune Deficiency Syndrome was recognised as an entity when a series of homosexuals were detected to be suffering from *pneumocystis carinii pneumonia,* an organism causing opportunistic infection in the immunocompromised. These homosexual men did not have nay antecedent immunocompromising conditions. A search for the cause of immune depression led to the discovery of the Human Immune Deficiency Virus - I in 1983 by Dr. R.C. Gallo and Prof. Luc Montagnier independently. Initially the virus was christened HTLV - III as it was supposed to be HTLV - I & II, the viruses that cause some types of Leukaemia in human beings.

HIV - I is a Retrovirus having by RNA as genetic material. Replication of retroviruses occurs by the introduction of RNA in the host cytoplasm. Using the host cell material, synthesis of the DNA strand is achieved via the viral RNA dependent. DNA polymerase popularly called the reverse transcriptase enzyme.

The T-helper cells (T-Lymphocytes are divided into two populations : helper and suppressor cells) that express CD_4 surface glycoprotein act as the major target of HIV for replication and spread. the T-helper cells also act as reservoirs for HIV[2].

The fact that the Simian Immuno Deficiency Virus (SIV) infects the African green monkey8 without causing overt disease led to the discovery of HIV - II from some African patients in Western Africa. Although less virulent than HIV - 1, it causes a disease spectrum similar to HIV - I.

HIV & Tuberculosis - The Deadly Duo

As early as 1986, there was an upsurge in the number of cases of

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Tuberculosis related to HIV infection in the United States (where the prevalence of Tuberculosis infection was on the decline). By 1989, there were 20,000 excess TB cases reported in the U.S.[3,4]. High rates of incidence were found in specific racial groups like Blacks, Hispanics, Haitains and those with a history of intravenous drug abuse[5,6]. Subsequent reports from Haiti and Sub-Saharan Africa also vindicated the fact that HIV related TB was on the rise in these countries[7,8].

The two deadly conditions influencing each other will be elucidated in the subsequent discussion.

Epidemiology of HIV & Tuberculosis - Facts & Figures The Global Scene

It is estimated by the WHO that 14 million people are infected with HIV globally. The number of cases has increased dramatically in India and Thailand in the last few years. Although 2.5 million AIDS cases are estimated globally, only, 6, 11, 589 cases have been reported.

One third of the World population (1700 million) is infected with tuberculosis. Eight million new cases occur every year, 7.6 million in developing countries alone (95%). Four million people died world wide of tuberculosis[9].

It is estimated that 3 million people are co-infected with HIV & Tuberculosis (IVAT 1993). Of these 5.6 - 7.1% breakdown annually to active disease. The relative risk caused by HIV infection of leading to progress of tuberculosis infection to tuberculosis disease is estimated to be six-fold and thus HIV infection is by far the most potent activator ever documented.

The unfortunate aspect of these figures is that the bulk of these cases are in the developing world-Sub-Saharan Africa and South-East Asia. Data from various countries like Ziare, Zambia and Rwanda have shown that 35-65 percent of TB patients have HIV infection[10,11]. The epidemiology of HIV infection in Africa is characterised by the fact that it is spread by the heterosexual route. Eighty percent of the prostitutes in these countries are HIV infected. It is estimated that 4.1% of all tuberculosis cases in the world presently are HIV related.

The Indian Scene

It is estimated that there are one million HIV infected individuals in India (ICMR) and that 40% of

our population is tuberculin positive. Computing from the above data, we estimate that 4 lakh people pre co-infected with HIV and TB in India. Given a breakdown rate of 10%, 40,000 of these people co-infected with HIV & tuberculosis will develop active Tuberculosis.

Our own study in Bombay showed that 8.9% of TB patients are HIV infected and 70% of female tuberculosis patients with HIV infection were commercial sex workers.[12]

The Pathophysiologic Basis for the Development of Tuberculosis in the HIV Infected[13]

In the HIV infected, active tuberculosis precedes a diagnosis of AIDS in a large proportion of the cases[5]. The risk of progression from latent to active TB has been estimated to be between 2 and more than 10 - fold higher in HIV infected individuals than in HIV seronegative people.

How does HIV affect Tuberculosis

HIV can affect a variety of cellular mechanisms important in the restriction of mycobacterial growth. Qualitative and quantitative defects in T-lymphocyte function result from direct HIV infection of cells expressing the CD_4 epitope and can severely limit the production of macrophage activating cytokines capable of inducing an anti mycobacterial state in calls of monocyte lineage. In addition, macrophages themselves are susceptible to HIV infection and nave shown to be defective with respect to a variety of host defense functions. Both T_4 lymphonenia and HIV infected macrophages are present in the lower respiratory tract of HIV infected individuals, a circumstance which probably underlies the unique susceptibility of HIV infected to tuberculosis.

Does TB Affect Progression of HIV infection?

M. Tuberculosis being a more virulent infection than the other opportunistic agents like *P. Carinii* or Toxoplasma, tuberculosis will develop earlier in the course of HIV infection. Besides, Tuberculosis may accelerate the process of development of AIDS by the following mechanisms :

(1) Macrophages in the HIV infected act as reservoirs of the virus and virus replication may continue in these cells. Tuberculo-

sis being a powerful stimulant of macrophage function could send signals that enhance viral replication.

(2) M. Tuberculosis can augment HIV disease by the activation of CD_4 + lymphocytes. If these cells are already HIV infected, subsequent tuberculosis - induced activation may lead to viral replication that in turn, causes death of the host cells, thus increasing the rate of depletion of T_4 helper cells.

Data show that reactivation of previously acquired infection is mainly responsible for TB in HIV infected individual where the risk of TB infection is high, as in the developing countries[14]. The disease may also develop from recent primary infection and possible from exogenous reinfection.

Clinical Features

The symptoms in patients with HIV infection and TB include fever, cough and weight loss. These are also common in other non-tuberculous opportunistic infections occurring in AIDS patients. The presence of unusual extrapulmonary manifestations suggest HIV infection. It would be extremely difficult to differentiate between HIV seronegative and seropositive tuberculosis patients on the basis of clinical presentation.

Diagnosis

HIV infection can be diagnosed by ELISA. Modern ELISA Kits, besides being highly specific and sensitive can also detect antibodies to both HIV-I & HIV-2. A window period of 3 months after infection, wherein antibodies to HIV are not yet formed may render in HIV infected sample - false ELISA negative. These samples may be submitted for antigen detection with Polymerase chain Reaction (PCR) or viral cultures. ELISA positive samples may be confirmed by the Western Bolt test, although this is not entirely indicated owing to the high specificity of repeat ELISA testing.

Role of Tuberculin Testing

Despite the ultimate development of energy in AIDS patients, at the time of the diagnosis of TB a significant proportion react to tuberculin. If patients with HIV infection, a tuberculin skin test of 5 mm or more may be considered positive.

In our own experience, HIV infected TB patients who are initially tuberculin positive and later

become negative on tuberculin negative patients show poor response to anti-tuberculous therapy. Mortality is higher in this group.

Bacteriology

Sputum or tissue samples for AFB smear and cultures among patients with tuberculosis and HIV infection gave a lesser yield than seronegative tuberculosis patients. In our own series, only 48% of seropositive tuberculosis patients were sputum smear positive as compared to 70% in seronegatives. This has not been supported by all studies. A lower yield from bacteriological samples compounds the problem of diagnosis. This can be overcome by the following means :
(*a*) Induced Sputum : As in other opportunistic infections, in HIV, induced sputum is found to be more useful in diagnosing tuberculosis[15].

(*b*) *Bronchoalveolar Lavage and Transbronchial Biopsy :*

These may augment the yield of mycobacteria in cases of pulmonary tuberculosis.

(*c*) *Serological Diagnosis :* A significant rise in IgG titers in serum has been seen in patients with TB & HIV infection. Although these may not be sensitive or specific particularly as there may be non-specific rise in immunoglobulin titres in the HIV infected patients.
(*d*) *DNA Probes :* These are not yet commercially available in our country.

Chest X-ray

The radiological presentation of Tuberculosis patients with HIV infection is different in the low prevalence areas for tuberculosis (Western countries) as compared to that in the high prevalence areas like Africa or South-East Asia

Review of the Western literature reveals that :

(i) 10 percent of patients with Tuberculosis and HIV Infection (Bacteriologically proven) may be normal.

(ii) Bilateral hilar lymphadenopathy with non-specific infiltrates in mid and lower zones of the lung are more common. this picture is more like a primary TB complex and is an unusual feature in non-HIV infected Tuberculosis adults.

(iii) Apical and cavitatory dis-

ease is relatively uncommon in the HIV infected, Tuberculosis patients[15].

In contrast to this, a review of literature from Africa shows that :

(i) 69 percent of HIV infected patients as opposed to 92 percent HIV negative tuberculosis patients showed apical disease Also cavitation was not uncommon although it was less compared to seronegative tuberculosis patients.

(ii) Pericardial and Plural TB was strikingly more common in HIV infection[16].

In our series of 182 patients of TB and HIV infection, cavitation was seen in 56 percent of HIV seropositive TB patients as compared to 57% of seronegative cases. Plural effusion was seen in 5.49 percent of seropositive cases as opposed to 3.79 percent in seronegative cases[17].

Therapy

Tuberculosis in the HIV infected can be treated with short-course chemotherapy. Similar to the HIV negative TB patients.

Initially the Centres for Disease Control (U.S.A.), had suggested that the continuation for therapy be extended to six months instead of four months in the seronegative patient. Subsequently, the WHO has recommended that the HIV positive patients be treated the same way as the HIV seronegative TB patient[4].

Problem in Therapy of the HIV infected TB patient

(1) In our series of patients, most tuberculin positive patients showed good response to the therapy. Tuberculin negative patients showed poor response to therapy and most tuberculin negative patients died.

(2) Reports from the U.S.A. have shown an increase in multi-drug resistant cases of tuberculosis in HIV infected patients. This was not seen in our series.

(3) Adverse reactions to anti-tuberculosis drugs are more common in the HIV seropositive patients, particularly if one is using thiacetazone.

(4) Drug interactions between anti-tuberculosis therapy and AZT (anti-retroviral drug) have been reported.

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Ketoconazole, which is used to treat various fungal infections in the HIV infected patients may reduce serum Rifampicin levels. Isoniazid is known to decrease serum Ketoconazole levels.

(5) Compliance is seen to be decreased in the HIV infected patient as compared to the seronegative TB patient.

Chemorophylaxis

Notwithstanding the rigorous of diagnosing Tuberculosis in the HIV infected, patients who are tuberculin positive (5 mm or more) but who do not have active tuberculosis, should be offered Chemoprophylaxis. Isoniazid and Rifampicin (10 mg/kg body weight) for 3 months is adequate for the purpose. Isoniazid alone may not be useful as there is very high primary resistance to Isoniazid in our country.

B.C.G. & HIV Infection

It remains the policy of the WHO that it should be continued as part of the extended programme of immunization in developing countries except where symptomatic HIV infection is present[18].

Disseminated B.C.G. disease may result if symptomatic patients are vaccinated.

Economic and Demographic Impact

HIV is the strongest risk factor for Tuberculosis observed in the last 100 years in subjects infected with tubercle bacilli. It has disrupted the balance between the tubercle bacillus and the community. Although adequate chemoprophylaxis would prevent a considerable number of TB cases among these individuals, its application is not feasible in developing countries with a high prevalence of both tuberculosis and HIV infections. With India and Thailand likely to be the largest reservoirs of HIV positive cases by the turn of this country, the prospects look bleak.

HIV and TB, the deadly duo, has a considerable economic impact too. The expenditure on Tuberculosis will rise with the increasing number of cases due to HIV and also the cost involved in treating the complications of HIV. Besides, both HIV and Tuberculosis affect the productive segment of the population i.e. people in the age group of 20-40 years.

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WE SOLICIT YOUR PARTICIPATION IN FIGHTING A RELENTLESS BATTLE AGAINST TB

ROLE OF NGOS' IN TUBERCULOSIS

DR R.P. BHAGI*

NGO's have been the subject of intellectual enquiry in the recent years. NGO, as a matter of fact is meant for welfare and development of society as a whole irrespective of social and economic status of individual, and dispersal of welfare in far flung and isolated areas where the Govt. agencies fail to reach. Welfare and development of society includes not only economic growth but also the humanisaton of individual to maximise his expression and creativity.

Health is well recognised as a major area where NGO can play a great role. Presently a small portion of elite society have access to health care facilities while the larger part of the population who are really in need of health care have no access to these modern facilities. This is the area where the NGO alone can reverse this process.

NGO in developing countries like India is as yet at an early stage though voluntarisation has played a pivotal role in Indian social history.

Gandhiji gave a call for voluntary work in this country in 1920 and for uplift of rural poor in 1930, which drew a large number of committed persons and this nationalist stream of NGO continues to grow.

In 1950-1960 many NGOs came forward for relief and rehabilitation of victims of natural calamity such as cyclone, earthquake etc.

Seventies witnessed the emergence of a new breed of NGOs, who took challenges to translate the concept of equality, social justice, community participation and integrated development embodied with the primary health care approach.

In Eighties and early Nineties there was again a shift in the ideology, attitude, values and social status and also perhaps in political thinking and will, in regard to participation of NGO as equal partner of Govt. Similarly women non Govt. organisations (Mahila Mandals) also came out with high motiva-

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tion in social commitments, sensitivity to the need of the needy poor and developed the programme to the need of community.

NGOs' participation in Tuberculosis work dates back to 1935 when the wife of the then Viceroy of India gave a sum of Rs. 1000/- from the "King George Vth thanks giving fund" to start TB Work. Thus the history of NGO's participation started. The TB Association of India was formed in 1939. Since then TAI is sparing no efforts to spread the message of Anti-TB movement in India. The TAI and its 25 state affiliate Associations are working in close co-operation with Govt. agencies in promoting the National TB Control Programme. The Association endeavours to remove the ignorance, superstition and stigma attached to tuberculosis by Health Education to create an awareness in the masses. The awareness programme is carried out through out the country through state affiliates by distribution of literature, brochure, flip charts etc. in regional languages.

Till now through the role of TB Association of India and its state affiliates and other NGO was accepted with out question as "Complementing/supplementing" of TB control activities. But after "Suraj Kund Conclave" the Govt. has recognised the role of NGO as partners with Govt. in making the NTP a success.

Even in the new strategy adopted by Govt. of India, with the help of World Bank, NGO though not fully, are being taken into confidence to enhance the goal.

In Delhi NGO activities started in 1939 where a few social workers met to launch the movement to fight against tuberculosis, in response to a call by Lady Willingdon to start a crusade against this deadly killer disease. A provincial TB Association was formed with care and After Care Committees in the walled city. Gradually with the help of more social workers and Non-Government agencies the TB Association gained strength and Care and after Care Committees were established and the name of the provincial TB Association was changed to Delhi Tuberculosis Association.

After independence with the increase in population of Delhi, Delhi TB Association was expanded and Regional TB Committee were also formed. The Care and after Care Committees were affiliated to Regional TB Committees which are affiliates to Delhi TB Association.

The main aim of Delhi TB Association is Health Education of the persons residing in slums, juggi, jhopari areas through the TB Chest Clinics, Hospitals and other NGO's engaged in the TB work in Delhi. This is being done with the help of Video, exhibitions and distribution of literature on tuberculosis. Delhi TB Association is also supplying Anti-TB Drugs to various NGO's engaged in TB work in Delhi.

Thus NGOs with their limited resources such as shortage of funds, staff etc. are striving hard to do their best in collaboration with the Govt. in its efforts.

Anyone can get Tuberculosis. Tuberculosis does not respect age, sex, wealth or poverty. However, Tuberculosis is more among

– Males than females
– Older people than young
– Poor than rich people

The number of Tuberculosis patients per 1,000 population is the same in villages and cities.

Since more people live in villages, more patients are found in villages

"CURRENT STRATEGY AGAINST TUBERCULOSIS"

by

DR. BALDEV RAJ*

Two very important developments, have shaken the National Tuberculosis Control Programme First is the increasing rate of Multidrug Resistance (MDR). The other is AIDS. Both are preventable. Every effort should be made on war footing to prevent the development of MDR and AIDS. Responsibility lies mainly on the medical paractitioner for the former and on the patient for the latter.

Prevention is better than cure, for both these problems. Medical profession must be motivated to take every possible step, not to allow the development of resistance. This effort should be started from the day the diagnosis of pulmonary tuberculosis is made for any patient. Doctor must spare a few minutes to motivate his TB patient. The impression he makes is better than his para-medical staff. He should stress upon the fact that :-

1. TB is curable and that there is nothing to fear.
2. Anti TB drugs should be taken regularly and for prescribed duration.
3. If any untoward feature is experienced after drug intake, if should be reported to the doctor.
4. Proper disposal of sputum must be stressed.

Prescribing physician must see that minimum of two effective bactericidal drugs have been prescribed. Every operational effort should be made to see that the prescribed treatment has been carried on by the patient. When patient becomes asymptomatic or his sputum becomes negative for A.F.B., repeat motivation must be done. Last, but not the least, adequate length of treatment must be followed. It these steps are taken, we can prevent the development of MDR. The physicians at the centre and patients at the periphery need education and motivation, otherwise all the achievement of four decades will be "undone". All persons responsible for N.T.C. Programme, must remain vigilant for this strategy, lest the situation get out of control.

Western part of the World en-

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joyed reputation for successfully controlling TB. Over the last decade they have been dismayed by the spread of AIDS and TB in their countries. Tuberculosis has already been recognised as one of the most frequent opportunistic infections in persons infected with HIV, in developing countries like Africa & India.

Tuberculosis is unique as compared to other infectious complications of HIV and AIDS, as it is potentially communicable and infectious by respiratory route, is treatable with early diagnosis and even cure is possible with anti-tuberculosis chemotherapy. It is preventable by counselling, health education to tuberculosis patients, giving BCG to infants from HIV positive mothers and by giving effective chemoprophylaxis with Isoniazid. Therefore, physicians and health care personnel must be familiar with the manifestations of tuberculosis is patients with HIV infection, because tuberculosis is often their first clinical manifestation of immunodeficiency.

To control the co-epidemic of HIV and TB following efforts should be made at the national level.

Control of AIDS and TB should be co-ordinated to provide consistent high quality care to patients with both diseases and to advise infected individuals regarding the risk of disease and methods to prevent transmission to others. A tuberculosis expert should be included among the members of National AIDS programme.

As HIV is transmitted through sexual contact and through blood, and appropriate chemotherapy rapidly renders persons with TB, non infectious, there is no reason to isolate HIV-infected persons, or AIDS patients with or without TB.

Adequate safety procedures involving infections, blood and blood products or other body fluids when caring for TB patients should be enforced regardless of a patient's HIV-status.

The guidelines for sterilization and high level disinfection methods effective against HIV should be promoted and followed. Where sterility of needless and syringes can not be ensured, an entirely oral medication regimen should be used. BCG should be administered to infants as early in life as possible, specially when the mother is known to be or suspected of being HIV-infected. BCG should be withheld from individuals with symptomatic HIV-infection or full blown AIDS cases.

Therefore thus, it is obvious that planning of movement must be made against these two problems in the developing as well as developed countries.

HUMAN IMMUNO - DEFICIENCY VIRUS (HIV) AND TUBERCULOSIS - THE TICKING TIME BOMB

DR. J.N. BANAVALIKER*

Human Immuno deficiency virus (HIV) infection and tuberculosis (TB) are two diseases well known to mankind. Tuberculosis is prevalent since time unmemorial, but HIV infection has made its presence known within a period spanning a decade. Both these diseases form a deadly combination-both are strange but intimate bed fellows.

The number of cases of tuberculosis initially showing a downward trend, rose dramatically in 1986. This unprecedented resurgence of tuberculosis is largely related to the human immuno deficiency virus (HIV) epidemic. The stark reality, largely overlooked, is that amongst infectious diseases, tuberculosis (TB) is the leading cause of death, each year. Globally, there are estimated 8 million new cases of TB and 2.9 million deaths from the disease. Approximately one third of the world's population harbours *Mycobacterium tuberculosis* and is at risk of developing the disease. In developing countries, TB accounts for 6.7% of all deaths; 18.5% of all deaths in adult aged 15-59 yrs., and 26% of avoidable adult deaths. For centuries, it has aptly been called "The captain of the men of death".

The developing world is now bearing the full brunt of the HIV epidemic and will continue to do so for the foreseeable future. Whatever happens during the next decade, many million poor people will become sick and die prematurely as a direct consequence of established HIV infection. India has already a large pool of tuberculosis, the deadly combination of Tuberculosis and HIV spells definite doom.

In the developing world, early HIV disease rather than AIDS seems more common. To understand the trend of HIV better – the disease can be divided into three arbitrary but functionally distinct stages :-

(a) Early HIV disease :- in which the immune system is rela-

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tively intact and the patient has no stigmata of infection.

(b) Late HIV disease :- in which features of immuno-suppression are present and many patients have AIDS-related complex.

(c) AIDS :- Characterized by opportunistic infections.

In early disease and a reasonably preserved immune system, typical pulmonary or lymphatic tuberculosis or pneumococcal pneumonia occurs at a much higher rate than in normal persons but responds well to standard therapy.

In late disease more atypical presentations are characteristics such as invasive salmonella and staphylococcal infection, recurrent pneumonia and extra-pulmonary tuberculosis. Mixed infections are common and mortality can be high if therapy is delayed.

High grade pathogens such as *M. tuberculosis, S. Pneumonia* and the salmonella are endemic, highly associated with poverty, and transmitted in overcrowded, insanitary environment taking a large toll of children and young adults.

HIV and Tuberculosis

A strong association between TB and HIV type 1 and 2 has been found in population where tuberculosis infection is prevalent. More than 50% of TB patients have been found to be HIV seropositive. In sub-Saharan Africa, the World Health Organisation (WHO) estimates that 2.4 million individuals are co-infected with HIV and mycobacterium tuberculosis. A high proportion of co-infected individuals are expected to develop active tuberculosis at some point in the course of their HIV infection.

Clinically, apparent tuberculosis develops in approximately 10% of infected patients, soon after primary infection of years later (reactivation tuberculosis) Unfortunately, the risk of active tuberculosis amongst HIV infected persons with positive tuberculin skin test is extra-ordinarily high, estimated to be 8 percent per year. Recently a new phenomenon has been observed-transmission of multi drug resistant strains of *mycobacterium tuberculosis* to contacts, especially with pre-existing AIDS and HIV infection making it a still more complicated problem.

The incidence of tuberculosis in patients with AIDS is almost 500 times the incidence in general population.

Role of HIV in TB

Epidemiological evidence indicates that HIV infection-

(a) Increases the risk of reactivation of Patent tuberculosis infection.

(b Increases the risk of progressive disease from new infection.

HIV/AIDS Epidemic in India

The first HIV seropositive individual in India was identified in 1986 among the prostitutes of Madras. Since then, the surveillance activities have been gradually expanded, resulting in HIV testing of over 2 million persons by the end of June, 1994. The surveys covered various groups, including heterosexual promiscuous males and females, injecting drug users (IDU's), pregnant women, blood donors, and recipients of blood and blood products.

Amongst the total number screened-20,96,053, the seropositives (HIV) are 15,399, the seropositivity rate thus being 7.34/1000. The number of AIDS cases in India is 768 (period of report upto 30.6.94).

The data for all groups combined showed that the HIV prevalence rates grew from 0.2% in 1986 to 0.7% in 1992. In Bombay, HIV prevalence among commercial sexed workers has jumped from 2% in 1988-89 to about 40% in 1991. In Manipur, the prevalence of HIV was about 54% in IDU's. Studies conducted at the Christian Medical College (CMC), Vellore on time trends fo HIV infection among the three promiscuous groups combined (i.e. prostitutes and male and female STD patients) show a 1.5 fold increase in prevalence from about 15 per 1000 in 1986-87 to about 23 in 1991-92. Time trends of infection among prostitutes alone show that the prevalence increased by a factor of 12 from 37 per 1000 in 1986-87 to 452 per 1000 in 1990-91. Similarly, there is a trend of an increasing prevalence among the male and female STD patients, but a lower rate than in the prostitutes. In pregnant women, and blood donors the prevalence has remained stationary or has increased very slightly.

Through these surveys, it was established that female sex workers in the state of Maharashtra and Tamil Nadu and IDUs in three North Eastern States of Manipur, Nagaland and Mizoram are leading risk groups from the point of view of HIV infection.

HIV Infection and Tuberculosis in India

The epidemic of HIV has triggered a secondary epidemic of tuberculosis worldwide. At the Tuberculosis Research Centre (TRC), Madras, 220 HIV positive persons are being followed up for development of tuberculosis. Of these, 115 had an abnormal chest radiograph. The sputum of 34 of these patients showed *mycobacterium tuberculosis* on culture. Another 34 had grown non-tuberculous mycobacteria. Tuberculin reaction of 12 mm or more was seen in 113 patients (51%). Forty two infected individuals (34 with positive bacteriology and 8 with persistent abnormalities on X-ray) have been started on a 9 month short course anti-tuberculosis therapy. Another study from the National Institute of Virology (NIV) Pune, shows that of the 269 HIV positive persons, 11 had concomitant tuberculosis infection.

In order to study the trend of HIV infection in tuberculosis patients, screening of all cases of tuberculosis who reported to TRC Madras, the District Tuberculosis Centre (DTC) and TB Sanatorium, Vellore, has been undertaken. Of the 3071 tested during 1991, 12 were positive on Western Blot test. At NIV, Pune 359 tuberculosis patients were screened for HIV; 4 tested positive by U.B.

Patient Management

Among the diseases associated with HIV infection, tuberculosis is of vital importance, because it is contagious by the respiratory route, readily treatable and potentially preventable with chemoprophylaxis.

Treatment of HIV seropositive patient is important, not only because it increase the duration and quality of life, but also because untreated individuals transmit the disease to others.

The focus of control is the effective treatment of sputum positive pulmonary tuberculosis patients. In HIV associated tuberculosis, the WHO recommends a six month short course of chemotherapy with Isoniazid, Rifampicin, Pyrazinamide and Ethambutol. There is too, a reserve line of drugs e.g. Cycloserine, Ethionamide, Ofloxacin etc. for HIV patients infected with atypical mycobacteria.

Problems for Chest Physicians

For the future, chest physicians treating HIV patients with tuberculosis have three major problems :-

1. Association of HIV with typical *mycobacterium tuberculosis*. Response to standard drugs is good.

2. Association of HIV with atypical mycobacteria (*Myco. avium intracellular* complex).

   Atypical mycobacteriosis is poorly responsive to standard as well as experimental, anti-tuberculous drug therapy.

3. Association of HIV with multi-drug resistant tuberculosis.

The prognosis is extremely poor. In a study, despite agressive multi-drug treatment 72 to 89 percent of the patients out of more than 200 patients were dead in 4-19 weeks with 38 to 70 percent of the deaths caused by tuberculosis. The median survival time for AIDS patients with MDR was 1.5 months as compared with 14.8 months for HIV infected patients without AIDS (Fischl et al, 1992). Buscillo et al. (1992) describe a group of 19 patients with HIV infection in AIDS and MDR. Sixteen died despite administration of a four drug regimen for a mean of seven weeks.

Problems for Managers

In developing countries like India, innumerable problems would be faced by the managers involved in the management of cases of HIV and TB. Some of these are :

I. *Provision of Drugs*

In India where tuberculosis is rampant, providing costly drugs would be a burden and may result in drug default due to non-availability of anti-tuberculosis drugs in all chest clinics. Non-availability of drugs added to the ever menacing problem of non-compliance from patient would only result in MDR. In India, effective management of MDR would practically be out of reach, specially in the poor population.

II. *Human Resources*

Human resource needs for patient management will vary from country to country according to the existing health structure and services provided to the HIV/AIDS patients. There is a need for staff trained in counselling to help patients understand the need for compliance with a long course of tuberculosis treatment and, as a high proportion of tuberculosis cases will also be newly diagnosed HIV positive people, to help them 'live positively with AIDS and avoid

unsafe sex. There might be a need, in foreseeable future, of increased staff to cope up with the problems. Further, the requirement of sincerity, dedication and all round efforts of staff through motivation is mandatory to effectively manage cases of HIV and TB.

III. *Role of Non-Governmental Organisations (NGO's)*

Financing tuberculosis patient care will necessarily be tied to the financing mechanism of the general health care systems. While the recovery of the costs of care is possible for the urban higher income groups, for the majority of rural lower income groups, the scope for cost recovery is limited or impossible.

Even where tuberculosis drugs are provided free of cost, the other costs such as transport to collect drugs can be considerable.The role of NGO's will be of vital importance in not only financing of drugs but even mounting programmes on preventing of tuberculosis, spreading awareness of the disease and provision of diagnostic equipment in institutions.

Management of HIV associated TB can also be carried out effectively when governmental agencies work hand in hand with NGO's. It cannot be denied that the war against these diseases has to be a concentrated effort of one and all.

Treatment of the ever increasing number of people developing tuberculosis as a consequence of the AIDS epidemic is becoming a new challenge in hospitals. Given the resource constraints there is an urgent need to start examining ways in which a large of tuberculosis patients may be diagnosed and treated, while still being able to provide for people with other health problems.

Time is fast running out to develop an appropriate strategy for coping with the clinical challenge of the HIV epidemic and tuberculosis in the developing world. The consequences of failure are horrifying and unimaginable.

EDUCATE PEOPLE ABOUT CAUSATION AND PREVENTION OF *TUBERCULOSIS*

AIDS IN SOUTH EAST ASIAN COUNTRIES IMPLICATIONS FOR EDUCATION

Dr. C. Achuthan*

AIDS has been described as one of the most deadly disease of our time because it attack and destroys the very core of our existence - the immune system. (2) Furthermore, there is no cure at present and most treatments are experimental.

> *"We must remember that there is good news about HIV infection, and there is bad news. The good news is that nobody needs to get it; the bad news is that nobody knows who's got it. We shall concentrate on the good news."*

An attempt has been made to review briefly the AIDS scenario in South East Asia (S.E.A.) and the role of the health educations (HE), the health care workers (HCW), and other related functionaries in the prevention and control of this epidemic. The emphasis is on the educational aspects because of its vital role to bring about the desired behavioural changes.

The first major challenge that AIDS has posed is that it makes AIDS work as a partnership between biomedical sciences, the behavioural/ social sciences and the humanities. Nothing less will equip mankind to deal with the AIDS phenomenon effectively.

AIDS Scenario in South East Asia

Detailed accounts are discussed elsewhere. (3, 4, 5, 6). However, relevant aspects are cited below :

- In South East Asian Region, AIDS was first reported in 1984 in Thailand.
- Over a million adult HIV infections were reported for the period ending July 1992.
- The major mode of HIV transmission in this region is through heterosexual contact 46.20%, 18.28% by intravenous drug abuse and 18.48% by blood transfusion.
- Among the eleven member

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countries of WHO, SEA region, neither AIDS cases nor HIV infections have been reported so far in Bhutan and DPR Korea.

- It is of interest to record that the highest HIV positives are encountered in Thailand and the lowest in Maldives (6). According to the latest estimates, the prevalence is likely to be more.
- Exceptional increase in HIV sero-prevalence rates are observed in India (Bombay and Madras prostitution); Thailand and Myanmar (during abusers).
- A rapid increase among drug pushers in Manipur (India) (50% of samples tested are positive).
- Projections of HIV/AIDS in selected areas :
  * India by 1986 : 2 to 3 million HIV infected persons; and 1,79,000 AIDS cases.
  * Thailand by 2000 AD : 2 to 4 million HIV infected persons.

Educational Intervention

All the South East Asian member countries of WHO have established National AIDS Control Programmes (NACP). They have also set up National AIDS Committees (NAC) to provide policy and advisory support to the programme (6). It is reported that :

- about 50% infected with HIV become ill in about 10 years.
- approximately one out of three children born to HIV positive mother, is HIV infected and dies before the fifth birth day.

Inspite of this dismal picture, the good news is that nobody wants to get infected. In the absence of a protective vaccine and drug for treatment, education seems to be the only substitute for both to bring about the desired changes in the attitude and life style of the communities. Education plays a pivotal role in the fight against AIDS. Work places, hospitals, schools, colleges, jails, army and police are ideally suited for educational intervention since large number of people will be available at any point of time. Medical officers often tend to medicalise the issues. Teachers may feel shy to talk about condoms. But, we have a large army of well trained work force such as - Village Health Guides (VHG), Auxiliary Nurse Midwives (ANMs), Anganwadi Workers (AWW), Block Health Educators (BHE), Lady Health Visitors (LHVs) besides the

Reported cases of AIDS and HIV infection in South East Asian Countries as on 30th October, 1992

Country	First Case reported in	HIV Positives	Latest AIDS cases full blown	Latest estimate of infected persons yet to be identified
Bangladesh	–	9	1	–
Bhutan	–	0	0	–
India	1986	10,730	238	400,000
Indonesia	1987	70	24	–
DPR Korea	–	0	0	–
Maldives	1987	1	0	–
Myanmar	–	4,246	16	100,000
Mongolia	–	1	1	–
Nepal	–	70	9	–
Sri Lanka	1986	66	19	–
Thailand	1984	34,545	909	200,000 to 400,000

functionaries of other related departments. There are also the student nurses doing midwifery. This work force the grass root level technical support group, will be more appropriate for this task since they will be at ease in talking about safe sex, family planning (FP) and sexually transmitted diseases (STD) to the people of their own age group in a language in which the community can understand.

Education of the target population is the single most powerful weapon we possess against AIDS at the moment (3, 4). Experience elsewhere has shown that :

- AIDS education can be effective and meet the challenge in this region. It can control the spread of HIV and also sexually transmitted diseases.
- denial of the existence of a grave situation is followed by a tendency to put the blame on others e.g., visitors.
- sero positivity studies of a specific segment of population should not be construed as representing the whole situation.
- the AIDS virus gradually disables and destroys body's immune mechanism, he or she

becomes vulnerable to almost any infection may be from another virus, a bacterium, a fungus or a parasite and may be mistaken for Tuberculosis, Pneumonia, Diarrhoea, etc., for which he or she has fallen a prey.

This is exactly what the Health Educators and the Health Workers should know.

Education and Human Behaviour

The behaviour involved in AIDS transmission is personal, private, often hidden and even disapproved by society. The educators have to be familiar with the sex behaviour of the target population to modify or change their behaviour pattern through educational intervention. This is no doubt a very sensitive issue, yet it is of immense practical value for prevention and control of AIDS. This should be kept in view during training sessions of the grass-root level workers for promoting the use of condoms by the sexually active population.

At present, there is perhaps little information on :

* what actually motivates the people to engage in risky practices? (unprotected sex, intravenous drug pushing)
* Identifying the effective means of convincing them to avoid risks, and
* what educational and other activities are needed for sustaining the changed behaviours in the long run.

It is in this context, the assistance of the medico-social worker, the behavioural Scientist, the Communication specialist and sexuality expert will be required to plan, design and implement effective educational programmes. Six patterns could be identified (6), which could influence the individual's willingness to modify attitudes and behaviour to prevent disease transmission. These patterns should be considered while planning educational strategy, designing educational materials and training programmes at micro-level. They are :

- knowledge of the disease & preventive behaviour,
- perceived susceptibility to a given disease,
- perceived benefits and costs of engaging in preventive behaviour,
- a cue to action that triggers preventive behaviour, e.g., illness of a relative, etc.,
- peer and social norms perceived as supporting or discouraging preventive behaviour and

- a sense of self efficacy or seeing oneself as capable of engaging in preventive behaviour.

AIDS Preventive Measures - Indicators

So far,the behavioural aspects and the vital role of the educators were discussed. What positive action may be taken by the health care workers, health educators and medical officers are discussed below.

The emergence of HIV has created a scare about personal safety. This ranges from refusal to extend health care to the HIV positives to the staggering expenditure involved in diagnostic and safety methods (5). Nonetheless, use of hand gloves by the health care workers in specific situations and use of condoms by sexually active population should be promoted urgently.

In India, HIV infection in hospital patients is 0.25%. With appropriate precautions, such as the use of sterile syringes and needles, the infection is bound to drop further. Similarly, the field functionaries engaged in routine blood smear collections for malaria, filaria, national surveys etc., should take the ordinary precaution of proper sterilisation after each prick. Time honoured naked flame to sterilise the needle tip in the field, hospital and laboratory should not be forgotten.

The most important and effective barrier contraceptive available for preventing sexual transmission of HIV is the condom. In the case of India, the following information are worth noting :

* Only 4.5% couples are effectively protected by conventional contraceptives (5).
* From 1968-69 to 1988-89, there has been geometric rise of condom use.
* The ratio of commercial purchase and free supply has also shown a rise from 0.33 to 0.66.

These factors clearly show that acceptance of the condom is there. Sustained efforts have to be mobilised by the health care workers for further promotional activities. The health educators have to focus on this vital and simple preventive procedure.

No condom usage instructions are printed on the condom packages in India. As in Nepal and Bangladesh, printing of pictorial instructions on the package will be of immense value in view of the prevailing literary rate in India. This is no doubt a policy matter, beyond the scope of the health educator. But, use of the

available educational materials (like the flash cards on maternity and child health and family planning) at interpersonal level during field visits would offset deficiencies.

Poverty and ignorance are the two important risk factors in India and other countries of the region. A third of world's births occur heve. Also, half of world's maternal deaths occur heve. Further, women form one third of HIV infected persons. Over two thirds of the infected persons live in these countries and have little access to health care services. Therefore, providing services to them, is likely to strain the already strained resources and services. It is worth while to note that 26-50% of the infants born to these are infected, 50% of them die within their second birth day.

All these staggering facts and figures clearly establish that education is the most important tool we have and health educators have to play a pivotal role in the AIDS programme - prevention and control, lest by 2000 AD, the disease should wipe out the last three decades' achievements in the health sector.

An overview of AIDS prevention and control in S.E.A. Region is discussed below:

Bangladesh

The national short term plan for the prevention and control of AIDS has been implemented (8).

There is no precise estimate of STD in Bangladesh. Although prostitution is not officially recorded, commercial sex is known to exist in the cities.

The operational strategies in medium term plan (MP) are preventive in approach, dealing with blood transfusion, skin pricking and sexual transmission. The plan provides for information dissemination. The Bureau of Health Education implements these activities besides IEC programme. A workers manual has been prepared for the different functionaries. For health promotion, target audiences have been identified.

The recent study has shown that the health workers and doctors are the preferred sources of information on AIDS. The next preferred source is the mass media particularly the radio.

The condom's use range from 17.6% in urban areas to 6.0% in rural areas. There appears to be no religious obstacles for its use. Detailed instructions are forthcoming for condom users.

Effective health promotion is planned through the network of traditional healers, religious leaders, monks, village elders, voluntary

workers and health workers at inter-personal levels.

Facilities are provided for counselling HIV positives at the hospitals on how not to transmit the infection to other uninfected persons.

Thailand

AIDS was first reported in Thailand in 1984, three years after, the first reported case in USA. The national programme on prevention and control of AIDS is in force since 1987 (7).

The programme objectives are :

- to disseminate information on AIDS;
- to educate general public and the specific risk groups;
- to identify risk factors and risk behaviours;
- to prevent spread;
- to provide care to the cases; and
- to train medical and health personnel.

The role of health promotion education in the prevention and control of AIDS, is considered to be the most significant aspect of AIDS programme. The activities under IEC consists of :

- mass production of IEC materials;
- use of various types of mass media;
- establishment of mobile health education teams and
- organisation of regular health education programmes.

Health education strategy aims at the following target groups :

Intravenous Drug Users

The education materials focus on changing drug use behaviour because of the risk involved therein.

Sexual Risk Group

The health eduction materials lays emphasis on :

- transmission factors;
- information on safe sex practices;
- details on condom usage;
- avoiding pregnancy.

Blood and Blood Product Recipients

The educational efforts are directed towards the health care professionals, hospital and clinic workers, by providing information on the rational and safe use of blood and blood products.

Of equal importance is the need to

dispel unnecessary fear of acquiring AIDS while taking care of HIV cases. The HIV positive case should be asked not to donate blood, sperms or organs.

HIV Positive Women

The focus is to prevent perinatal transmission of AIDS. Active health education programme for HIV positive women is the key element in this strategy. In addition, routine advice on use of condoms for prevention, will also be there. The antenatol clinics would also conduct screening tests on women with narcotic experience or commercial sex.

Bhutan

No case has so far been identified in Bhutan. By way ot an advance action and as a first step, a basic training guide for the teachers and health workers has been developed (9). This guide book consisting of 56 pages, has set out the detailed curriculum in five parts.

Part four deals with planning health promotion for AIDS prevention and control. This part has further been sub-divided into six sub-sections, with emphasis on the promotion of healthy behaviour to be adopted in the prevention and control of AIDS. The eduction/learning objectives precede each sub-section. A post-training evaluation has been built into the curriculum.

Paediatric HIV Infections

To complete the overview, a mention is made about the HIV infections in children and youth. This is closely linked to activities on FP, MCH, School Health, STD and AIDS.

All infants born to sero-positive women are sero-positive at birth. During the next 6-18 months, the antibodies disappear in uninfected children.

In India prevalence of low birth weight (30%) and pre-term birth (10 to 15%) are rather high. Therefore, a close watch has to be kept for positive HIV infection in all antenatal, natal and postnatal care activities and in programmes of anganwadies and well-baby clinics.

In Conclusion

Advent of HIV infection and undetected HIV infected mothers and children, youths, blood donors and recipients and unsuspected adults in the community have provided a great stimulus and urgency to implement the AIDS prevention and control programme

Since there is no scientific information on the cultural aspects of sex behaviour in different sections of the population, it is essential to undertake studies to collect such data and information regarding life-style of people especially sex behaviour to facilitate adoption of effective educational approaches and strategies.

AIDS Prevention Priorities

- Eduction among individual, group and community, should receive top priority in health education especially in health centres, clinics, hospitals, schools, colleges, offices, factories, transport companies, youth and women clubs. The maternity and child health care including family planning and school health are to be provided to all whether in primary health centre areas or in urban slums.
- Providing appropriate contraceptive care to eligible women will reduce substantially the birth of HIV infected infants. The health functionaries (ANMs, LHVs, BEs, Anganwadi Workers) should review their performance periodically.
- Following all aspectic precautions meticulously during antenatal and postnatal contraceptive care.
- Wherever there is school health education, family life education, population education, sex education and in related educational activities, the subject of AIDS prevention and control should receive high priority.
- Wherever there is adult eduction, either for illiteracy or for occupation, action should be taken to include the educational component for prevention and control of AIDS especially the use of condoms. The adult women should insist upon the use of condoms by their partners.
- The use of sterile needles for pricking ear and nose, acupuncture, tonsure ceremonies and even tatooing, will avoid accidental infections.
- Immunization against six preventable diseases should be sustained as a health promoting measure.
- Perinatal nutrition support at all clinics, specially at the Anganwadies - care of the infants and pre-school children is another qualitative supplementary effort.

- It is relatively easy to achieve and maintain minimum health care with health education. This is only possible with active participation of individuals and families with health care workers functioning in health centres and hospitals who are undertaking the challenge of preventing AIDS.
- The myths and misconceptions created around AIDS has generated scare among the people, doctors and health care workers. This has created rather an inhuman attitude towards AIDS patients, who deserve sympathetic care with dignity as a fellow human being. Therefore, suitable educational programme should be instituted, utilising appropriate modern media and folk media.

AIDS has come to South East Asian countries. It is trying to get a firm foothold to destroy the fabric of society. Till such time "a vaccine and a drug" makes its appearance, we are at the mercy of AIDS. But, there is a substitute vaccine to fight this scourge and that is "Educ̣ation". The protection provided by this vaccine is much more lasting.

Health care providers should educate themselves about AIDS and then educate the community to bring about the desired behavioural changes which should be a fitting reply to AIDS

–Ed. Advisor

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Strengthen our efforts to fight and control TB

AIDS AND TUBERCULOSIS

Facts one should know about AIDS and Tuberculosis

Dr. E.V. Venkatarama Gupta and Dr. E.V. Savitha Sri

Acquired Immune Deficiency Syndrome (AIDS) is caused by Human Immuno-Deficiency Retrovirus (HIV). It is not a hereditary disease. it is preventable by following healthy life styles and sex behaviour, but incurable at present. AIDS epidemic is becoming world-wide. It is spreading from urban to rural areas too.

Tuberculosis is caused by mycobacterium tuberculosis bacilli. It is not a hereditary disease. It is preventable and completely curable. There are twenty million cases of tuberculosis in the world; of whom five million are sputum positive, coughing tubercle bacilli and spreading the disease. Two million die of tuberculosis every year.

It was estimated in early 1992, there were more than four million persons with dual-infection of HIV and tuberculosis, 95% of whom are in developing countries. The estimated annual risk rate of tuberculosis among them is 5-8%; with a cumulative lifetime risk of more than 30%. Mortality is also high among tuberculosis patients with HIV seropositivity. HIV infected persons have a high frequency of extrapulmonary tuberculosis, which is difficult to diagnose.

Mode of Spread of Infection in TB and AIDS

Tuberculosis spreads from patients suffering from sputum positive tuberculosis, discharging tubercle bacilli to the non-infected persons, mainly through air borne sputum droplet infection.

AIDS is primarily transmitted through sexual intercourse; intravenous drug abuse with sharing of common syringes and needles; careless HIV infected blood transfusions and perinatal infection from mother to child. The full-fledged case of AIDS manifest during a period of 3 to

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10 years after HIV infection, causing sufficient damage to the body's immune system, leaving the person susceptible to tuberculosis and other diseases. Two years after the diagnosis of AIDS, the patients generally die.

In most of the developing countries where TB is common, most people get infected with mycobacterium tuberculosis during their childhood. They do not usually develop TB because their immune system can prevent further multiplication of the bacteria. However, the bacteria are not destroyed but are dormant in the body, fifty per cent of the world population are thus infected.

Tuberculosis Infection Exposed to HIV Infection. Reactivated case of Secondary Tuberculosis and AIDS

A person who is infected with tuberculosis bacteria as a child and who later becomes infected with HIV, uses his immune protection against the bacteria that have remained in his body. The bacteria get reactivated causing tuberculosis disease. The immunosuppression resulting from HIV infection allows the latent tuberculous infection to progress to clinical tuberculosis.

HIV Infection Exposed to Tuberculosis Injection Progressive Primary Tuberculosis Extrapulmonary, Miliary or Meningitis and AIDS

The increase int he number of HIV related cases of TB has serious implications to both TB and AIDS control programmes requiring collaboration in developing prevention and treatment strategies.

Symptoms and signs indicative of only Tuberculosis

1. Persistent cough, fever and chest pain of more than 2 weeks duration and/or haemoptysis, loss of weight.
2. Symptoms of extrapulmonary tuberculosis-usually refers to organs involved, in addition to fever and loss of weight.
3. Lymphadenopathy - enlargement of glands in Cervical, Auxiliary and Inguinal regions of the body.
4. Caries Spine and TB arthritis - Limitation of

movement and joint pain.

5. B meningitis - Fever and headache.
6. Intestinal tuberculosis - Alternate diarrhoea and constipation.

Symptoms and signs of AIDS and TB

1. Prolonged fever, persistent cough, night sweats, fatigue/malaise, diarrhoea for more than one month, loss of weight.
2. Lymphadenopathy - Extraingunial enlargement of glands.
3. Recurrent Herpes and
4. Oropharyngeal candiasis - fungus infection.

Investigations for diagnosis of Tuberculosis and AIDS
For TB

1. Sputum for AFB - Microscopy
2. X-ray of Chest
3. Blood culture for AFB
4. Urine, stool for smear and culture for AFB
5. Tuberculin test.

For AIDS

1. Elisa test for HIV (Enzyme Linked Immunoassay)
2. Western blot
3. Immuno fluorescence
4. Histology
5. Culture

Diagnosis of AIDS and Tuberculosis

The degree of HIV induced immunosuppression required to reactivate healed Tuberculosis lesions appears to be less than that needed to help opportunistic infections to get a foothold.

This pulmonary tuberculosis is often diagnosed first in persons who do not as yet present other evidence of HIV induced immunosuppression.

Diagnosis of Tuberculosis Pulmonary/Extra pulmonary if found associated with a positive serological test - Elisa for HIV infection, is now regarded sufficient proof of the patient having AIDS.

Mycobacterium avium-intracellulare is the most common opportunistic mycobaterial infection in HIV seropositive persons in the developed countries.

Now in countries like Zaire,

Uganda, etc., 30-50% of the tuberculous patients are found HIV seropositive.

Disseminated histoplamosis, Isosporiosis, bronchial or pulmonary candiasis, oral thrush, non-hodgkins lymphoma, Kaposi's sarcoma (below 60 years of age), chronic lymphoid interstitial pneumonitis in children below 13 years of age, chronic generalised tymphadenopathy are indicative of AIDS. test for HIV is positive serologically or virologically.

Bacterial infections like a typical mycobacteriosis is common in HIV positive persons, so also endogenous reactivation of primary focus.

Mantoux test is not helpful in making a diagnosis because of a state of allergy due to HIV infection. Tuberculin test is often negative.

Ches X-ray in AIDS and TB

1. The findings on chest X-ray examination are more typical of primary tuberculosis, lower lobe lesions are more frequent.
2. Cavities are rare in pulmonar8y tuberculosis with AIDS.
3. Pneumonic consolidation - lobar or segmental, are often seen. So also infiltration or large mediastinal nodes.
4. Miliary mottling are more common.
5. Pleural effusion is often seen.

Sputum for AFB is mostly negative in early stages, bacilli may be isolated from blood culture and opportunistic mycobacteria from faeces culture.

Other unusual presentations include abscess of the brain, testes and chest wall.

Treatment of Tuberculosis and AIDS

HIV infected persons with tuberculosis are as infective as HIV negative patients with tuberculosis. Tuberculosis inspite of association with AIDS is responsive to standard "Short Term Chemotherapy", even in its disseminated form. But, drug toxicity is more. Patient compliance is less. Treatment helps to stop the spread of infection. If someone has TB and AIDS, regular and adequate Chemotherapy for tuberculosis will help sputum conversion and

cure of tuberculosis.

AIDS with atypical mycobacteriosis will respond well to chemotherapy with five anti-TB drugs - Isoniazid, Rifampicin, Pyrazinamide, Streptomycin and Ciprofloxacin/ Oxafloxacin for adequate duration. Duration is prolonged to one year. MAIS Complex is treated for two years.

Prevention of TB and AIDS

Education of all sections of population is a vital preventive measure both for Tuberculosis and AIDS, especially for AIDS. Training and continuing education of all health care personnel and development workers are crucial for success of prevention and control of these diseases. These educational strategies should facilitate people, hospital staff and community workers to acquire essential scientific knowledge about these diseases, motivate them to act as per the advice and change their behaviour. The following should result from education:-

* All persons with persistent cough, prolonged fever, loss of weight, malaise, fatigue, diarrhoea, lymph-node enlargement or night sweats, get sputum examination, chest X-ray, tuberculin test, culture of faesces, urine, sputum for tubercular bacilli.
* TB confirmed cases take regular and complete 6-8 months treatment.
* all new born babies without any symptoms (mentioned above) get BCG vaccination.
* Cover mouth while coughing
* Avoid indiscriminate spitting.
* Use condoms during sexual intercourse (minimises the risk of HIV infection).
* Ensure HIV free blood/ blood products for transfusion.
* Use only sterile/separate syringes and needles to avoid the risk of HIV infection.
* Accept HIVtesting voluntarily for early diagnosis of HIV infection and take consequential precaution against both TB and AIDS.
* Needles, syringes, blood transfusion materials left

over, blood products, TB positive sputum, sputum cups are to be ensured sterility before disposal. Incineration or burning is best for paper spout cups and dressings. Boiling of syringes and needles for twenty minutes ensures sterility.

* Disinfectants to be used for surfaces, instruments, skin, are 25% ethyl-alcohol, 1% glutaradehyde, 0.2% sodium hypochlorite (0.5% bleach), INN solution (for 1 minute). Disinfection of hands is by soap and water wash followed by alcohol rub.

BCG Vaccination

1. BCG is contra indicated in HIV positive infants, children and AIDS patients.
2. BCG is given for all infants who are tuberculin negative and HIV negative to prevent tuberculosis.

BCG and WHO Recommendation

BCG vaccination helps to protect children against serious forms of TB. WHO recommends that in all infants with no obvious HIV related infections should be vaccinated, even if the mother is known to be HIV positive.

Preventive Chemotherapy

Isoniazid - 6 mg/kg. body weight and Rifampicin 10-15 mg/kg body weight is given for 18 months to 2 years for all infants, who are HIV positive and tuberculin negative children, to prevent tuberculosis. It may be extended as long as required.

Strategies of control of AIDS and TB

The classical approach to tuberculosis is that the disease is highly transmittable, preventable and completely curable. BCG and good chemotherapy are important strategies.

With a majority of the HIV positive patients having atypical presentation on account of the disease flaring up outside of the lungs, the danger of a rapid spread of disease is much less in AIDS patients.

Intravenous drug abuse, sexually permissive individuals and AIDS mothers are educated about disposal of blood and

blood products; needles and syringes used, blood, urine and sputum positive for AFB; boiling for twenty minutes for disposal is advised.

AIDS patients are counselled against marriage.

Infants and children who are HIV positive should not be given BCG.

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Tuberculosis is diagnosed by examining the sputum to find out whether TB germs are present in it.

If the sputum does not contain these germs, the person is sent for X-ray examination to the nearest health centre after doing one more sputum examination, if necessary

If X-ray facilities are not available, the patient is kept under observation and sputum is examined again once or twice.

Sputum examination is the best available test for TB. Tubeculin test helps in diagnosing TB among children

INVOLVE MEDIA IN AIDS - HIV EDUCATION

AIDS - a spine chilling acronym for Acquired Immune Deficiency Syndrome - is now a familiar term. In a decade, the relentless spread of AIDS left its impact on the socio-economic health of nations. AIDS threatens the very fabric of the society. It affects people in the most productive age. It incapacitates people of ages when they are most needed for the support of the growing and the elderly. The impact of families . . . is enormous and is aggravated by the frequent stigmatization of people with HIV/AIDS. AIDS will also leave millions of children without parents. The AIDS orphans will swell the ranks of street children, already estimated at 100 million, increasing the number of young people vulnearable to HIV infection.

AIDS came to South East Asia region in 1985 with the first reported case in Thailand. Over 1250 cases of AIDS have been reported from the South East Asia region till October 1992. Thailand and India reported the largest number (95 per cent) of cases. Although the pandemic of AIDS in the region is still in its early stages, the virus is spreading very rapidly and more than million persons are estimated to have been infected since the beginning of the pandemic a decade ago.

Statistics apart, the fact that there is no cure for AIDS and that high reliance should be placed on prevention, should make us think, as fast as we can and act faster in the area of education.

Unlike in other health problems, HIV/AIDS has a large number/variety of target groups for education. These include people where sexual practices expose them to HIV/AIDS; sex workers; intravenous drug users; hospital staff; blood bank workers and the general public. The plurality of target groups with specific messages have been pointed out by health education experts. And that is the need of the hour to come down to earth and stop theorising and preaching.

Health educators and all those interested in people's health, nay nation's health, should start action programmes. Messages should be prepared for general audience and additional information to specific target audience should be built in.....

...In the educational efforts, the

NGOs and the programmes can and should use the channels of mass communication. Mass media represent the most readily available and are more economical means of spreading information. Media can create awareness; can advocate; can campaign; and give information in a way easily understood by the different groups. Radio has done tremendously well in the agricultural extension activities and in health. It was 'radio rice' in the forties when improved methods of rice cultivation were broadcast by the All India Radio. Use of green leafy vegetables in the diet became popular in Coimbatore and Nilgiris because of sustained programmes. The special audience programmes in the AIR should be able to reach different groups with success.

What is needed importantly is the planing of programmes and their implementation. Mass media have a fast spread and have credibility. Care should be taken to put out programmes with responsibility avoiding inaccuracies, which may create fear and misconceptions about HIV/AIDS. TV is getting more popular and with its visuals is more powerful in dissemination of message. TV programme also should be planned carefully and put out responsibly.

The glare of news media should not blind us to the 'potent' indigenous media which have a strong credibility with the rural and semi-urban people. Lavani singers, street drama troupes, kathavartha and burra katha teams and their ilks should be used in HIV/AIDS education. These troupes should be given the messages to be woven into their presentation.

The electronic media are generally government owned in the countries of the region. These should show interest in the health programmes including HIV/AIDS and should offer time for messages on health.

The inter-sectoral co-ordination has a very vital role in the spread of messages on HIV/AIDS. The youth department and its network, eduction system with its school and colleges, the factories with millions of workers, trade unions etc., should be a part of the gigantic educational efforts.

The HIV/AIDS programme messages should cast their nets wide and involve all development sectors in the education programme. Health education should offer its speciality in this area and the mass media - both government and the private - should extend their help in this national task which can brook no delay.

It is the social responsibility of the media to take up such public issues. There should be a change of attitude. The electronic media should go to the health programmes and ask 'what can I do for you' instead of the health programmes coming to them asking 'please do this for us'.

T.K. PARTHASARATY

Source : Extracts : Reproduced from Health Education in South East Asia, Vol. VII, No. 4, (IUHE/SEARRB) -- Oct' 92-Jan' 93 Issue.

TB can be prevented.

TB can be prevented by BCG vaccination. BCG should be given before the infection takes place. Infection taking place after BCG vaccination has much less chance to develop into disease.

Every child should be vaccinated before one year of age.

In villages health workers give BCG to children in their homes or it is given in health centre.

In big cities children are vaccinated soon after birth in the hospital before mother and child are discharged.

BCG is harmless and can be given safely soon after birth.

PROBLEMS AND ISSUES IN HEALTHCARE

Inspite of the significant progress made in the last 40 years, we are faced with the following major health problems and diseases :

(a) *Tuberculosis :* Half of the world's 20 million patients of pulmonary tuberculosis are Indians. Of this, 2.5 million are regularly spiting the tuberculosis germs in the environment to infect half a million more persons every year.

(b) *Malaria* : Malaria has been a major public health problem in the country. As a result of governmental efforts, peoples participation and continuing research, the incidence of malaria has declined over the years. Inspite of the best efforts, there has been a resurgence of the disease. The number of cases and deaths arising out of that have been increasing.

(c) *Diarrhoeal Disease :* Diarrhoeal diseases among children are widely prevalent in our country. These are important causes of morbidity and mortality in children below five years of age. Accurate data about the pattern of diarrhoeal disease and death among children is not available for the country as a whole. However, it is estimated that about 1.5 million children below five years die every year due to diarrhoeal disease. The Government of India has formulated a National Plan of Action to control diarrhoeal disease as an integral part of Primary Health Care.

(d) *Malnutrition :* Malnutrition is the biggest single contributor to child mortality. 19% of the total population and 40% of the mothers and children suffer from malnutrition. The present infant mortality rate is 90/1000 in urban areas and 140/1000 in rural areas.

(e) *Blindness :* In our country, 9 million are blind with cataract; 45 mil-

A wise old owl lived in oak; The more he saw the less he spoke; The less he spoke the more he heard; Why can't we all be like that bird?

- Anon

Source : Souvenir : First Joint Conference on Tuberculosis and Chest Diseases : Madras, 1989.

lion are visually handicapped. This is due to malnutrition, particularly Vitamin A deficiency which causes blindness.

(f) *Leprosy* : There are little over 3 million persons suffering from leprosy - one third of the world's total cases. Only a small fraction of the leprosy patients are currently being treated; large number of them are saliently spreading the disease all round.

(g) *Immunization :* We have extremely inadequate immunization facilities. This has led to 50,000 cases of tetanus, 25,000 cases of diphtheria and 300,000 cases of whooping cough every year. This substantially adds to child mortality.

(h) *Physically Disabled :* There are nearly 60 million disabled persons in the country and every year 5 million more are added.

(i) *Mental Retardation* : Nearly 15 million adults and children are mentally retarded in India.

> Obstacles are thing a person sees when he takes his eyes off the goal.
>
> - J. Cossman

(j) *Mental Illness :* Mental illness is one of the major health problems in India. We have currently 11 million serious psychiatric cases and nearly 200 million people suffer from neurosis and scizophrenia, and there are hardly 1000 mental professionals to provide mental health services.

(k) *Cancer :* Cancer cases will increase by 1990 AD. According to the iceberg theory, only a small fraction of the total morbidity in popula-

> *Read, read and read. Aviation and medicine have a good deal in common. Both are products of science. Both are changing the world's life and destroying the old concepts. If an airplane is flying it is already out of date. The practice of medicine is very much the same. Hospitals, clinics, physicians themselves are never aboe to be entirely upto date... So read, read and read.*
>
> - *Arthur Hailey*

tion is clinically recognised. It is however felt that due to preventive measures 70% of the cancers will be controllable.

(l) *Cardio-Vascular Diseases :* Cardio-Vascular Diseases will increase by 1990. Mass early detection and education campaigns will identify those individuals at high risk on whom preventive measures can be focussed. Prevention will require awareness. To promote awareness, health education programmes in school, factories and other places of work will have to be initiated.

(m) *Venereal Diseases :* With the progress in industrialization, increasing migration to urban cities and urban slums, the venereal diseases are on the increase. The diseases can be curbed through health education and sex education particularly in schools.

(n) *Sanitation :* 98% of the rural houses do not have latrines. One third of the 40 million households still use a system of sewage where human excreta is collected manually and disposed off unhygenically to pollute water resources and goods. 70 million people use the open ground for defalcation which breeds hookworms and other parasites.

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HELP
FIGHT TUBERCULOSIS

BUY TB SEALS

A TB SEAL COSTS Re ONE only

TUBERCULOSIS IS PREVENTABLE AND CURABLE

1
General Background to Clinical Tuberculosis

1: INTRODUCTION

1.1 About this book

This book is written for non-specialist hospital doctors, doctors in primary health care and other health professionals who may meet tuberculosis in the course of their work. **Almost all patients with newly diagnosed tuberculosis can be cured if properly treated**. Many will die if they are not properly treated. Therefore, as a responsible doctor or health worker

- DO NOT miss the diagnosis
- DO then give the correct treatment for the full period of time.

More than that, GOOD TREATMENT IS THE MOST IMPORTANT FORM OF PREVENTION. It makes infectious patients non-infectious. This reduces the passing on of infection in the community.

Tuberculosis is a challenging disease. Sometimes trying to make the diagnosis is like trying to solve a detective story. But if you succeed in solving the problem, you can be sure of a happy ending to the story. Modern treatment is highly successful in curing tuberculosis even in patients already infected with the HIV (AIDS) virus.

1.2 Some of the things you should know

If you are going to play your part in helping your patients, and in controlling tuberculosis in your country, you must know something about its cause. You must know where infection comes from. You must know how most people control that infection and do not get ill, but why some develop disease. The general public will also expect you to know something about the best way of **preventing tuberculosis**. If your country has a **national programme** for tuberculosis control, YOU SHOULD KNOW ABOUT IT and should play your part in making it work.

1.3 The world problem of tuberculosis

In many industrialised countries money, resources, high standards of living, and widespread chemotherapy in the last 40 years, have helped to reduce tuberculosis to a relatively minor problem. But in poorer countries it remains almost as big a problem as ever. Indeed, as their populations have increased and their tuberculosis rates have only slightly decreased, **there are probably more tuberculosis patients in the world today than there were 20 years ago**. The World Health Organization (WHO) calculates there are probably 8–10 million new cases a year in the world, and 3 million deaths. As patients in high prevalence countries who become infected with HIV (the AIDS virus) are very likely to develop tuberculosis, it may become even more common where both infections are prevalent. In these patients tuberculosis may take new or unusual forms (p 139).

1.4 The outlook

This may all sound depressing, but in several poor countries with high tuberculosis rates modern programmes of mass treatment efficiently applied, are showing excellent results. There are even signs that this success is beginning to make tuberculosis a little less common in some of these countries where HIV infection is low. The WHO has recently estimated the rate of decline in the **annual risk of tuberculous infection** in high prevalence countries. This is measured by surveys of tuberculin skin positivity (which, of course, measures **infection**, not clinical disease). In European and North American countries, after the introduction of chemotherapy, the rate declined by 10.5–14.5 per cent a year. Recent figures suggest an annual decline of 5–10 per cent in many Latin American, Arab and Western Pacific countries, 6–7 per cent in certain areas of large Asian countries and 2–4 per cent in some African countries. This is encouraging, but there is still a long, long way to go. Moreover, the rate may stop falling, or even start to increase again, in countries with widespread HIV infection. HIV infection damages a person's resistance to tuberculosis (p 137).

1.5 Tuberculin surveys and annual numbers of new cases

It has been calculated that **for every 1 per cent of new annual infections** (new tuberculin positives among the population) **there will be 50–60 new smear positive cases of pulmonary tuberculosis per 100,000 population per year and an equal number of either smear-negative or non-pulmonary cases**. Using this calculation a sample tuberculin survey can be used to calculate the probable number of new cases per year in a country.

1.6 Treatment

In many countries some doctors give **poor or inadequate treatment**. This is likely:

- to FAIL TO CURE the patient;
- perhaps to leave him with DRUG-RESISTANT tubercle bacilli, making it difficult for anyone else to cure him;
- to leave him alive (at least for some time) and INFECTIOUS, perhaps with drug resistant bacilli, so that he spreads the disease to others. So POOR TREATMENT is both POOR DOCTORING and POOR PUBLIC HEALTH.

Therefore, in section 2 of this chapter we give some general GUIDELINES and DOs and DON'Ts which will help to avoid common errors. We suggest you read these first, though we realise you yourself may not need this basic advice. Then go on (or refer when necessary) to the later parts of this book which give more detail.

2: GENERAL GUIDELINES ON THE TREATMENT OF TUBERCULOSIS

2.1 DOs and DON'Ts for doctors

2.1.1 DON'Ts. Avoid the following errors which are common in some countries:

1. Never treat a patient with probable pulmonary tuberculosis without **examining the sputum** (wherever microscopy is available). Children often have no sputum: diagnosis may have to be largely clinical (p 51).
2. Never give a **single drug alone**: drug resistance usually follows and is permanent.
3. Never **add a single drug** to a drug combination if the patient becomes worse. First make sure that he is taking the drug combination regularly. If he is, and is getting worse, his **bacilli will be resistant to all the drugs being used**. Adding one drug is the same as giving one drug alone. The patient's TB will soon be resistant to this also.
4. **Never fail to follow up the patient** and make sure he has **the full recommended course of treatment** (6 or 8 months with rifampicin short course chemotherapy: p 153). If at all possible make sure someone sees the patient taking every dose for the first 2 months (Direct observation treatment: see p 144).
5. Never use a combination of **streptomycin and penicillin for non-**

tuberculous conditions. It is seldom better than penicillin alone or tetracyline and may induce streptomycin resistance if the patient has undiagnosed tuberculosis. Only use rifampicin to treat either tuberculosis or leprosy.

6. Never treat only on the advice of **drug firm representatives**. Their advice will be prejudiced and may well be wrong.

2.1.2 DOs. Remember the following important and simple rules:

1. **Always examine the sputum** in a suspected case. It is the **only** certain method of diagnosis. If sputum negative, but X-ray suggestive, repeat X-ray in 3 weeks: it may be transient pneumonia (or lung abscess).
2. **Only use recommended drug combinations** (p 153). It is dangerous to use drug combinations which have not been proved, or are known to be bad or risky, when virtually all patients can be cured by established methods.
3. It is very important to **convince the patient (and his family)** that **he must complete the full course of treatment** (6 or 8 months with combinations containing rifampicin and pyrazinamide) to avoid relapse. **Explanatory leaflets** are useful and should be available in your country. (Even with illiterate patients, someone in the family or village can read the leaflet.)
4. It is essential to be **kind and sympathetic** to the patient. Experience has shown that he is much more likely to come back and complete his treatment if he believes you are his friend and that you want to help him personally.
5. Remember that **if a patient has missed more than a month of treatment, and is sputum positive, he has to start his treatment again from the beginning**. (Some national programmes use a different regimen for such patients: p 179.)
6. If a patient has had several courses of previous treatment (perhaps with poor drug combinations) and has now relapsed, refer him to a specialist (or obtain advice in writing). Planning treatment in such cases is difficult and a mistake can be fatal. Your National Tuberculosis Control Programme may have a special drug regimen for such patients: see p 180.

2.1.3 Cautions. For details of recommended drug regimens see p 153. But REMEMBER:

1. **Most failures** to respond to treatment, or relapse after treatment, are **because treatment has been too short**. This is due to doctor or patient not realising the importance of completing a full course with no interruptions.

   Unfortunately another reason could be that a member of staff has

stolen drugs instead of giving them to the patient. Yet another reason may be that the patient has sold the drugs instead of swallowing them!

Other failures are due to bad or irregular treatment with bad drug combinations: a poorly trained doctor or health assistant may have prescribed bad treatment. Or he may have failed to instruct the patient about what pills to take, when to take them and the importance of taking them regularly. In this case the patient's TB may have developed **drug resistance** (see p 149).

2. After too short a treatment with a First Line recommended regimen such patients are likely to have tubercle bacilli **still sensitive to standard drugs**. They can safely be put back on a **First Line regimen**.
3. If you consider you must give rifampicin (and if it is not yet included in your national programme):
   a) Make sure the patient can afford **the full course of treatment**. If treatment is too short he will relapse.
   b) Give **one of the recommended drug regimens** (p 153). Other regimens may result in failure, the development of **resistant tubercle bacilli** or **early relapse**.

2.2 Guidelines on tuberculosis for non-medical health staff

As a doctor you should ensure that all your staff know and act upon the following summary.

> Tuberculosis can be cured
> THE PATIENT'S LIFE DEPENDS ON YOU

2.2.1 Tuberculosis is an **infectious disease** spread through cough and sputum. Therefore DO ALL YOU CAN TO DISCOURAGE SPITTING. Never spit yourself.

2.2.2 **Symptoms of tuberculosis** If a patient has any of the following, consider him a 'Tuberculosis Suspect' (see p 95):

- cough for more than 3 weeks
- coughing blood
- pain in the chest for more than 3 weeks
- fever for more than 3 weeks

All these can be due to other diseases but **sputum must be tested** if any are present.

2.2.3 **Sputum examination is much more reliable than X-ray**. If 3 sputa **negative** give simple treatment (not tuberculosis drugs) but repeat sputum examination if symptoms continue and/or refer to a tuberculosis clinic or a doctor. Diagnosis in children can be difficult (p. 44). If possible refer to a doctor.

2.2.4 If **sputum is positive** tuberculosis can be easily cured if the patient takes his full treatment (p 141).

2.2.5 Symptoms soon clear but **treatment must continue regularly for the full period** recommended (see p 144). Otherwise tuberculosis comes back and the period of treatment has to start all over again.

2.2.6 BCG is a good protection against tuberculosis in children, especially against the fatal forms of tuberculous meningitis and miliary tuberculosis.

DOs and DON'Ts in tuberculosis

- DO always **examine the sputum** when there are symptoms suggestive of possible tuberculosis.
- DO make sure the patient understands that he needs a **full period of treatment though symptoms will soon clear**. (Give the patient a leaflet on treatment if available.)
- DO explain this to his relatives.
- DO be **kind and sympathetic:** then the patient is more likely to come back for drug supplies and continue treatment. Think of him as a friend you want to help.
- DO examine all **family/home contacts**, especially if they are ill.
- DO put his name in the **tuberculosis register** and give him a **treatment card** with the next date of attendance. Make sure he understands and remembers the date.
- DO send someone to his home if he **fails to come back** on the date. (A letter is usually less effective but may be all you can do.)
- DO check frequently your **supplies of anti-tuberculosis drugs** and see that you don't run out.
- DON'T forget that **any chronic cougher may have tuberculosis**, especially if he or she has fever and loss of weight.
- DON'T forget to **test the sputum**.
- DON'T forget to **follow up patients who fail to come back** and persuade them to complete treatment.

AGAIN
TUBERCULOSIS CAN BE CURED
YOU CAN DO MORE THAN ANYONE ELSE
TO SAVE THE PATIENT'S LIFE

3: THE BATTLE BETWEEN THE TUBERCLE BACILLI AND THE PATIENT

3.1 Causes of tuberculosis: the bacillus

OVERWHELMING IMPORTANCE	*Minor importance*
TUBERCLE BACILLUS (*Mycobacterium tuberculosis*)	West Africa (*Mycobacterium africanum*)
Rare and of slight importance (See text)	
Bovine tubercle bacillus (*Mycobacterium bovis*)	Non-tuberculous mycobacteria

Figure 1 *Causes of tuberculosis and related diseases* in high prevalence countries

3.1.1 Though there are some other sorts of bacilli the tubercle bacillus (*Mycobacterium tuberculosis*: TB) is the **main cause of tuberculosis all over the world**.

3.1.2 A slightly different type of TB, *Mycobacterium africanum*, occurs in West Africa. The only important difference is that it is often resistant to thiacetazone (Tb1) (p 173).

3.1.3 The **bovine tubercle bacillus** (*Mycobacterium bovis*) at one time caused much infection in cattle in Europe and the Americas. Infection was often passed on to man through milk. With control of cattle tuberculosis by killing of infected animals and pasteurisation of milk, these countries have largely prevented bovine tuberculosis in man. Disease can occur in cattle, camels and dromedaries in developing countries. It is thought to be rare but we do not yet have enough information on this. Human infection from bovine bacilli seems not to occur in India. Elsewhere in Asia it is thought to be rare, perhaps because in many countries milk is boiled before use. In others it is not used at all. We still need more information about how much bovine tuberculosis exists in Africa, both in animals and man.

3.1.4 **Non-tuberculous mycobacteria** include a wide range of bacterial species. Many are harmless. They are common in the environments of many high prevalence countries but they seldom cause disease. However, harmless infection in humans can give rise to a weakly positive

tuberculin skin test. (Disease from these bacilli has become relatively more important in some developed countries, such as parts of USA and Australia, where ordinary tuberculosis has now greatly decreased. It may also develop in patients infected with HIV. As these bacilli are resistant to most commonly used drugs the disease is more difficult to treat (p 186).)

Nearly all tuberculosis in high prevalence countries is caused by the common tubercle bacillus, *M. tuberculosis* (TB), so that is what most of this book is about.

3.2 Infection and disease

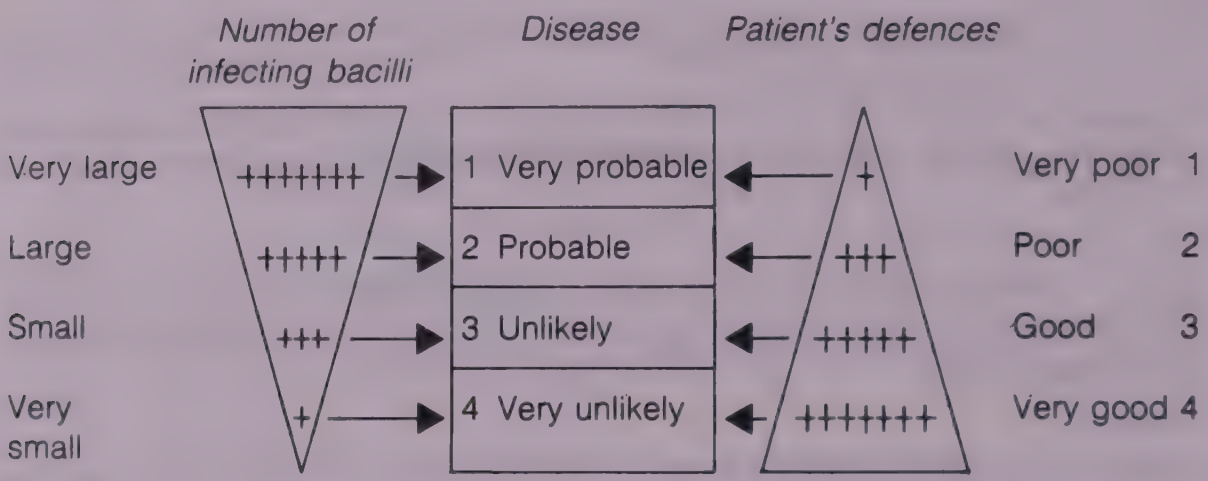


Figure 2 *Probability of developing tuberculous disease*. The influence of the numbers of infecting bacilli and the strength of the patient's defences

3.2.1 In the past, when tuberculosis was widespread in industrialised countries it was possible to show by skin-testing with **tuberculin** (p 192) that most young adults had become infected. But only a small proportion (about 10 per cent) developed the disease. This is still what happens in most high prevalence countries.

3.2.2 Whether **infection goes on to disease** (Figure 2) depends on:

- the *size of the infecting dose*, i.e. how many TB are inhaled;
- the *defences* of the person infected (host resistance).

3.2.3 In some cases infection may rapidly go on to disease. In others TB may **remain 'dormant'**, with a few 'sleeping' bacilli kept under control by the defences. But some later lowering of the patient's defences, e.g. by malnutrition, by another disease (such as HIV infection) or just old age, may allow the dormant TB to multiply and cause

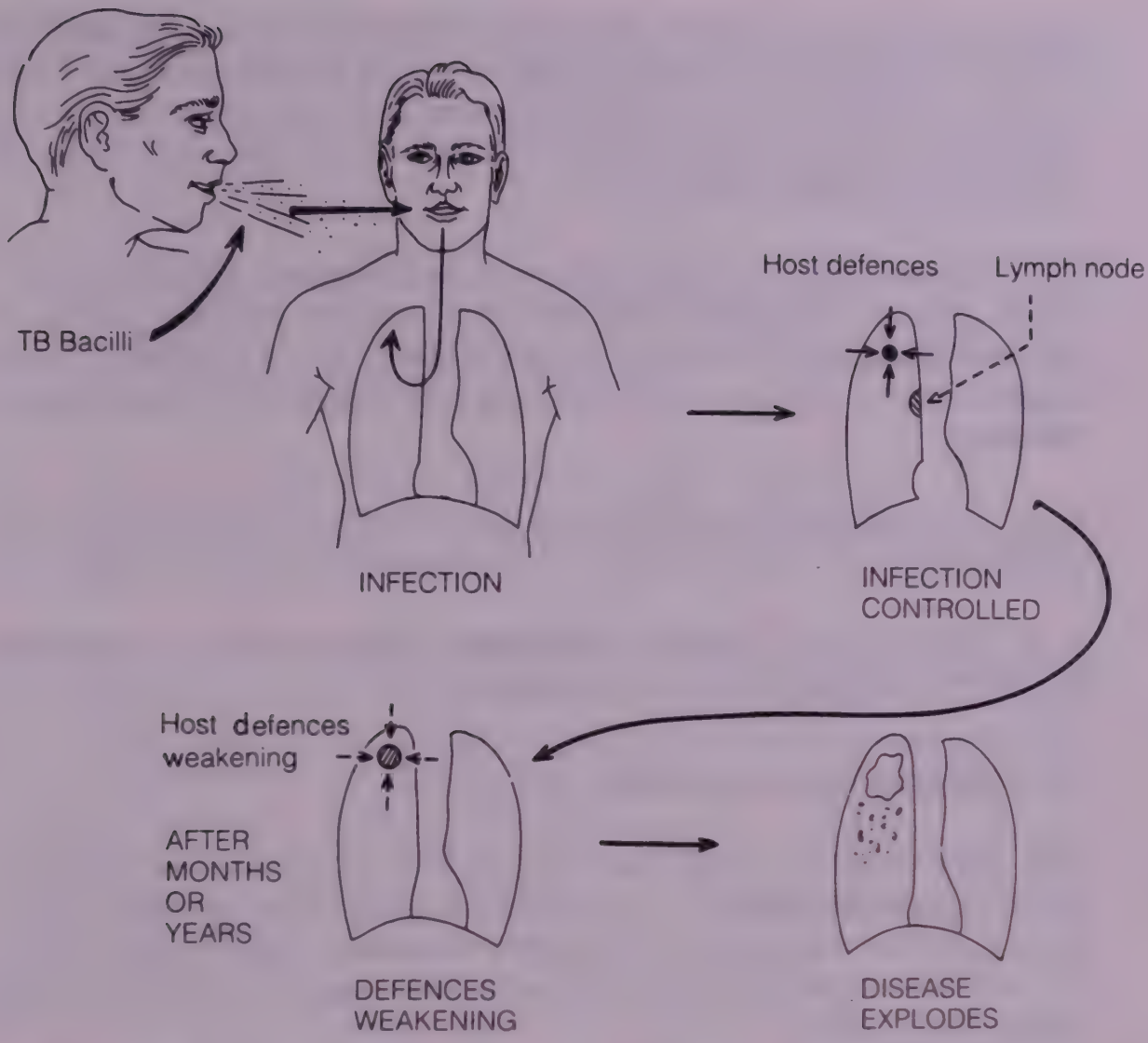


Figure 3 *TB infection and host's (patient's) defences.* At first the patient's defences may keep the TB under control. After months or years his/her defences may weaken, e.g. from malnutrition or another disease. Then the disease starts to spread in the lung. A cavity may develop in the lung. The sputum may become positive for TB and the patient infect children or other people

disease (Figure 3). In most people their host defences either kill off all the bacilli or, perhaps more often, keep them suppressed and under long-term control.

3.3 Where infection comes from (sources of infection)

3.3.1 Human SPUTUM is far the most important source. Coughing and spitting produce very small droplets containing TB which float in the air. These may be inhaled and cause disease.

3.3.2 Patients with sputum positive on **direct smear** (i.e. TB visible under the microscope) are much more infectious, because they are producing far more TB, than those only positive on culture. The closer

someone lives to the patient, the bigger the dose of TB he will probably inhale. An infant of an infectious mother will be at particular risk. Teach infectious patients to cover their mouths and turn their faces away when they cough. This becomes less important after 2–3 weeks of treatment (see next paragraph).

3.3.3 **Chemotherapy rapidly reduces infectiousness**, usually within 2 weeks. This is why **good treatment** of all sputum positive patients **is far the most effective method of prevention**. But if treatment is not continued for the full period the patient may **relapse** and again become infectious.

3.3.4 Infected urine and discharges etc. are theoretical risks but much less important, usually because they contain relatively few bacilli.

3.3.5 Children with **primary pulmonary tuberculosis** (p 51) **are not infectious**, because they do not cough out TB.

3.4 Lessons for prevention

3.4.1 In prevention, your most important priority as a doctor is therefore to **diagnose** patients with direct smear positive sputum and to make sure that they **complete effective treatment**. These sputum positive patients are also usually the most ill. They need treatment urgently to save their lives.

3.4.2 **Sterilisation** of sputum, bedclothes, etc.

a) Direct **sunlight** kills TB in 5 minutes. Exposure to sunlight is therefore a convenient method in the tropics. (But bacilli may survive for years in the dark: much spread of infection probably occurs in dark houses or huts.)
b) **Sodium hypochlorite** (1 per cent) liquifies sputum and kills TB rapidly but has to be used in glass jars as it damages metal. It also bleaches dyed material if dropped on it. (TB may resist 5 per cent phenol for several hours.)
c) **Heat**: TB are destroyed in 20 minutes at 60°C and in 5 minutes at 70°C.
d) **Paper handkerchiefs** should be burnt as soon as possible after use. (Old newspapers or other similar material can also be used and then burnt.)
e) Exposure to **air and sunlight** is a good and simple method, particularly in the tropics, for dealing with blankets, woollens, cottons etc.

3.4.3 **Environmental hygiene**. The aim is to reduce the risk from the

sputum of undiagnosed infectious patients. There is a limit to what can be achieved in poorer countries but the following could help:

a) *Reduce overcrowding* wherever possible (which also reduces other infectious respiratory diseases, such as pneumonia in infants).
b) Improve *ventilation* of houses.
c) Help everyone to think *spitting* a nasty and unacceptable habit. (In countries where tobacco and betel nut chewing is common, health education to stop this cancer-producing habit will also reduce spitting.) Teach that spitting spreads disease.

3.5 How a person resists infection (host defences)

Many things affect the way our bodies fight the tubercle bacillus. These include:

3.5.1 Age and sex (Table 1, p 12). There is little difference between boys and girls up to puberty. Infants and young children of both sexes have weak defences. Up to age 2 infection is particularly liable to result in the most fatal forms, **miliary tuberculosis** and **tuberculous meningitis**, due to bloodstream spread. After age one, and before puberty, an infected child may develop miliary or meningitis, or one of the more chronic disseminated types of tuberculosis, particularly **lymph node**, **bone** or **joint disease**. Before puberty the lung part of the **primary lesion** (p 31) usually just affects that local area, though cavities like those in adults may be seen in Africa or Asia in children with severe malnutrition, especially girls aged 10–14. The lymph node part of the primary complex may also give rise to lung collapse etc. (p 33). In Europe and North America, when tuberculosis was common, the **peak incidence of pulmonary tuberculosis** was usually in young adults. The male rate continued fairly high at all ages but the female rate tended to drop rapidly after the childbearing years. Women often developed pulmonary tuberculosis following childbirth. Limited information from Africa and India seems to indicate a somewhat different pattern. The prevalence of pulmonary tuberculosis seems to increase with age in both sexes. In women the overall prevalence is lower and the rise with age less steep than in men. In women it reaches a maximum at age 40–50 and then falls. In men it goes on rising at least to age 60.

3.5.2 Nutrition. There is very good evidence that **starvation** or **malnutrition** reduces resistance to the disease. This is a very important factor in poorer communities, both in adults and children.

3.5.3 Toxic factors. **Tobacco smoking** and high **alcohol** intake are important in reducing body defences. So are **corticosteroid drugs** and other **immunosuppressants** used for treating certain diseases.

Table 1 *Factors affecting the patient's defences against tuberculosis.* Age and sex. *If infection occurs at a particular age (lefthand column) the number of +s in the righthand column shows how probable it is that the patient will develop that particular form of tuberculosis.* Other factors. *The number of +s in the righthand column shows the importance of that particular factor in damaging the patient's power to resist the bacilli.*

Age and sex	Patient liable to develop
Under 1 year	Miliary tuberculosis++ Tuberculous meningitis++
Age 1 to puberty	Primary lung lesion+ Chronic disseminated tuberculosis, e.g. bone and joint+ miliary tuberculosis+ tuberculous meningitis+
Adolescent/young adult	PULMONARY TUBERCULOSIS+++
Middle age	
Males	PULMONARY TUBERCULOSIS++
Females	PULMONARY TUBERCULOSIS+
Old age	
Males	PULMONARY TUBERCULOSIS++
Females	PULMONARY TUBERCULOSIS+–

Other factors	
Factor	Importance
MALNUTRITION	+++
Toxic:	
Tobacco	+
Alcohol	+
Corticosteroids	+
Immunosuppressants	+
OTHER DISEASES:	
HIV infection	+++
Diabetes	+
Leprosy	+
Silicosis	+
Leukaemia	+
Measles (in a child)	+++
Whooping cough (in a child)	+++
Poor environment	?+
Race	?+
Immunological	
AIDS	+++
Alcohol	+
Tobacco	+
Other toxic	+

3.5.4 Other diseases. In many countries **HIV infection** is now far the most important. The damage to the body's defences frequently results in complication by tuberculosis (pp. 85 and 137). Tuberculosis is also liable to occur in patients with **diabetes**, **leukaemia** or **leprosy**. Miliary tuberculosis may follow **HIV infection**, **measles**, **whooping cough** or other acute infections in children. Chronic **malaria** and **worm** infestations may be particularly important in the tropics.

3.5.5 Poverty. This leads to bad and overcrowded housing or poor work conditions. These may lower defences as well as making infection more likely. People living in such conditions are often also badly nourished. The whole complex of poverty makes it easier for the TB to cause disease.

3.5.6 Race. It is difficult to separate the possible effects of race from other factors, such as poverty. However there is good evidence that isolated populations, for instance Innuits (Eskimos) or American Indians, when they met the disease for the first time had poor defences. Tuberculosis spread very rapidly and caused a high mortality. In Europe or China, where tuberculosis had been common for many centuries, those with congenitally poor defences had probably died early, often before they had children. The survivors probably had more 'natural' resistance to the disease. But in populations where the disease was new affected people often died in a few months from so-called 'galloping consumption'.

3.6 Lessons for prevention

3.6.1 Many of the factors we have been describing can be removed only by economic or government action to decrease poverty and improve nutrition. In industrialised countries this has been perhaps the most important factor in the long-term decrease of tuberculosis over the last century. As a doctor, you may not be able to do much about this. But in recent years LARGE SCALE EFFECTIVE TREATMENT has speeded up the decrease by reducing the numbers of infectious people in the population. You can and must contribute to this in your own area. The first priority is to make sure that all sputum positive patients complete effective treatment.

3.6.2 **Reducing national tobacco consumption** will help to prevent tuberculosis, as well as preventing lung (and other) cancers, coronary heart disease, chronic bronchitis etc. As a doctor, and a leader of opinion, you can do a lot about this. In particular, **do not smoke yourself** and NEVER in front of patients.

3.6.3 **Reduction in national alcohol consumption** will also help. YOU SHOULD THEREFORE SUPPORT NATIONAL NO SMOKING AND ALCOHOL REDUCTION CAMPAIGNS, which will prevent other important diseases besides tuberculosis.

3.7 BCG

3.7.1 BCG is a vaccine consisting of live bacilli which have lost their virulence. (The bacilli originally came from a strain of bovine TB grown for many years in the laboratory.) BCG stimulates immunity, increasing the body's defences without itself causing damage. Following BCG vaccination TB may enter the body but in most cases the body's increased defences will control or kill them.

3.7.2 Controlled trials in several Western countries, where most children are well-nourished, have shown that BCG **can give 80 per cent protection** against tuberculosis for as long as 15 years if administered **before** first infection (i.e. to tuberculin negative children).

3.7.3 A large scale controlled trial by WHO in South India, in children and young adults, at first showed no benefit regarding the rates of sputum positive tuberculosis (which was the only outcome recorded). But a moderate benefit appeared in the 15-year follow-up. In children in tropical countries there have been no prospective control trials in which all types of later tuberculosis were examined. But of course children seldom develop a positive sputum. If BCG is effective in children, it is just these other types of tuberculosis which it might prevent.

We can conclude that this Indian trial was not therefore a good trial of the possible benefit of BCG given to children. But other research in several poorer countries has shown increased protection of children by BCG, especially protection against miliary tuberculosis and tuberculous meningitis.

3.7.4 The present recommendation by WHO and the International Union against Tuberculosis and Lung Disease is that in countries with high tuberculosis prevalence BCG SHOULD BE GIVEN AS A ROUTINE TO ALL INFANTS (but with a few exceptions, such as active AIDS).

3.7.5 The **effect of BCG probably lasts about 15 years**, at least in a well-nourished population. It will help to protect in childhood but will lose some of its effect later. Some countries therefore try to repeat BCG about the age of 15 (e.g. in school-leavers). But it is difficult to cover the whole population at this age. And its value when given at this age in tropical countries has not yet been scientifically proved.

3.7.6 Because the main effect of infant vaccination is to protect children, and because children with primary tuberculosis are not usually infectious, BCG has little effect in reducing the number of adult infectious cases in the population. To reduce these, IT IS MUCH MORE IMPORTANT TO GIVE GOOD TREATMENT TO ALL SPUTUM POSITIVE PATIENTS. But of course we should give BCG as a routine to all infants as a protection in childhood (See 3.7.4 above).

Source : Clinical Tuberculosis by Sir John Crofton, Norman Horne & Fred Miller 1992
(Acknowledged with grateful thanks)

TUBERCULOSIS CONTROL PROGRAMMES

Table 2 *Essentials of tuberculosis control programmes*

1. *National and local agreement* to programme (para 4.1.3)
2. National and local *health education* about TB (para 4.1.5)
3. *Case-finding* by routine sputum microscopy for TB in those with symptoms (para 4.2.2–3)
4. *Standard supervised treatment* (para 4.2.5–6)
5. Methods for *recalling defaulters* (para 4.2.6)
6. *Standard records* (para 4.2.7)
7. Ensuring uninterrupted drug and other *supplies* (para 4.2.8)
8. Regular *training* and *retraining* (para 4.2.9)
9. *BCG vaccination* for the newborn (para 4.2.10)
10. Examination of *family contacts* (para 4.2.11)

4.1 Introduction

4.1.1 More and more high prevalence countries now have control programmes for tuberculosis, which have been nationally agreed (Table 2). In a number of countries the programme is combined with the Leprosy Control Programme. It is important that you should play your part in the national control programme if there is one in your country. It is poor doctoring to be ignorant of the programme and even worse to know about it and not to do your best to follow it out in your own work.

With the increase in HIV infection in some countries national programmes will have to take account of this in both diagnosis and treatment. We do not yet have clear guidelines, but at present there is much discussion. You will have to keep in touch with developments in your own country.

4.1.2 The aim of a national programme is to use limited resources to

prevent, diagnose and treat the disease in the best and most economical way.

4.1.3 Experience has shown that the programme is most likely to succeed if it has been fully **discussed by representatives of all those who will take part in it**. This includes central, intermediate (regional, provincial) and district administrators; specialist and general doctors, nurses and health workers from institutes, laboratories, hospitals and primary care; representatives of both health and finance ministries; and representatives, politicians and others, of the general population and local communities.

4.1.4 After central agreement of all these, it is important to hold seminars in different parts of the country at local levels. It is most important that representatives of the **local population** are consulted so that arrangements can fit in with local customs and convenience. For instance diagnostic and treatment sessions should take place when country people are likely to be in town for the local market day and at times when patients can get away from their work. Health workers must find out the **local beliefs about tuberculosis**, so that education about the disease and its treatment can be adapted to those beliefs.

4.1.5 The seminars should be followed by national and local **health education campaigns** (television, radio, newspapers, schools) about tuberculosis. They must also tell people about the programme, so that they know how tuberculosis can be diagnosed and treated, so that they know it can always be cured if proper treatment is taken and so that they have some idea how it is spread and how it can be prevented.

4.1.6 Note on local beliefs. Local beliefs about tuberculosis and its cause will obviously vary in different countries, different areas, different cultures and even different groups of the population in the same area. Religion, caste, tribe or degree of education may influence people's ideas. In some places people believe that tuberculosis is due to evil spirits which have got into the patient. Even where people know that tuberculosis is an infectious disease, they may think a particular person has got the disease because he has been bewitched. In one area most ordinary people thought that a patient usually caught tuberculosis from the stick which was used for cleaning the teeth. In another people thought that the symptoms were often due to a sin, such as adultery.

You may be able to persuade local healers to send patients with possible tuberculosis to health centres for diagnosis and treatment. Explain to them that if they try to treat these patients themselves they will fail. This will be bad for their local reputation and their practice.

In many cultures people think that tuberculosis is hereditary. This

ideas is not surprising. Tuberculosis is an infectious disease. Often several members of the family, sometimes in different generations, may develop it. Unfortunately this idea often means that people are ashamed of the disease. They feel that it is a disgrace to the family. If a daughter gets tuberculosis the family may be afraid that they will never find her a husband. This idea may remain even after she is obviously cured. If it is a common idea in the community in which you work, try to educate opinion leaders so that patients and their families do not suffer from this additional anxiety. In our experience the idea disappears when the community realises that good treatment is easily available and almost always cures the disease. Cured patients may be able to help in educating both new patients and the community.

4.1.7 If your country has a **National Programme make sure that you and your staff know its details and help to make it successful.**

4.2 Components of a national tuberculosis control programme (Table 2, p 15)

4.2.1 Details of model national programmes are given in:

a) *Tuberculosis Guide for High Prevalence Countries* by Jentgens, H., Oberhoffer, M., Rouillon, A., Styblo, K. Aachen, Germany: MISEREOR (in consultation with the International Union Against Tuberculosis and Lung Disease), 1986.
b) *Guidelines for Tuberculosis Control Programmes in Developing Countires – An Oxfam Memorandum* by Shears, P., Oxfam Health Unit, UK: Oxfam, 1985.
c) *Tuberculosis Control as an Integral Part of Primary Care*. Geneva: WHO, 1988.

(See Reference list p 203).

We only give a brief outline here:

4.2.2 Casefinding

a) Examine the sputum for TB of all patients who have had a **cough and sputum for more than 3 weeks** (The Indian national programme says 2 weeks.) This is particularly important if the patient also has **loss of weight, fever, pain in the chest** or has **coughed up blood** (Figure 4). Some patients have these last symptoms without any chronic cough. (See also p 92.)

If a patient has any of these symptoms think of him as a 'tuberculosis suspect'.

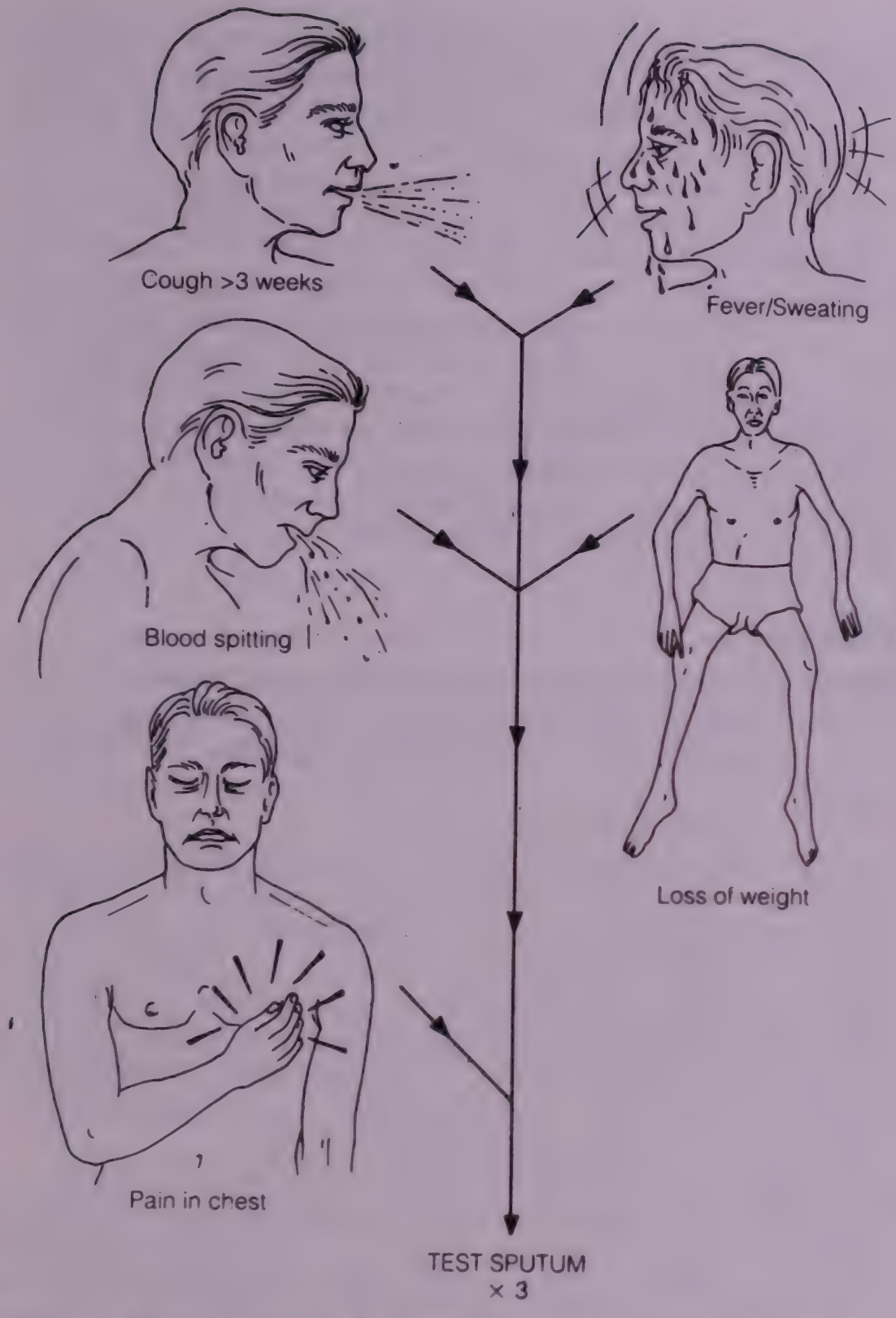


Figure 4 *Diagnosing lung tuberculosis.* The most important symptoms

b) Investigate and follow up any patient with an X-ray of chest showing a shadow which could be due to tuberculosis. In particular, examine his sputum for TB. But indiscriminate mass X-ray of the population is expensive and unreliable. We do **not** recommend it. Sputum testing is much more reliable. (See 4.2.3 c)).

c) **'Active' and 'passive' casefinding.** Most patients with tuberculosis

who are ill and with a positive sputum will attend some health facility (health centre, hospital, out-patient clinic or private doctor), but **will be diagnosed only if their sputum is routinely examined for TB**. This is 'passive casefinding'. 'Active casefinding' is going to people's homes and asking them to produce sputum for testing. This is very expensive and gives much fewer positives. 'Passive casefinding' is much more economical, provided it is properly done: it is the standard method in the vast majority of national programmes. If people in a community know that in their area patients with tuberculosis get good treatment from understanding and friendly health workers, and are cured, then far more people come looking for help. Once patients who come with symptoms are properly tested, properly treated and are properly cured, then it may be time to go on to active casefinding and search for the less urgent cases, e.g. those positive on culture only.

4.2.3 Diagnosis

a) **Microscopy of the sputum is far, far the most reliable** (and the cheapest) **method** which you can use in most places. Try to have three specimens examined. If only one is positive and the others negative, it is best to confirm with a further positive (because errors, clerical or other, can occur).

b) Because chronic cough may be due to smoking, chronic bronchitis, etc., many specimens of sputum will be negative. In good programmes only 5–10 per cent of patients usually turn out to have a positive sputum. If most sputa you send are positive, you are probably testing too few and are missing some cases of tuberculosis. You must test all patients with chronic cough, especially those with weight loss or other symptoms which might be due to tuberculosis. Do this wherever you work: in primary care, clinic, hospital or private practice. Not to do this is bad medicine.

c) **X-ray chest** (see p 97). Tuberculosis is difficult to diagnose with certainty on an X-ray alone. **Never treat such a patient without having examined the sputum**. X-rays are expensive and unreliable. Patients are often treated for tuberculosis when they do not have it. X-rays are sometimes needed for difficult individual problems, in particular for HIV-positive tuberculosis suspects, but are not suitable for mass case-finding in high prevalence countries.

d) **Tuberculin test** (see p 187) is often a less reliable method for diagnosis in poorer countries. Owing to malnutrition, other disease such as HIV infection, or the severity of tuberculosis it can be weak or negative even when the patient (adult or child) has active tuberculous disease. So that a negative tuberculin test does not exclude tuberculosis. But a **strongly positive test in a child sus-**

pected of tuberculosis can be very helpful. Remember a child can have a weakly positive test due to BCG and that in many countries a high proportion of adults will have a positive test due to childhood infection.

4.2.4 Laboratory services

a) **Microscopy** must be made widely available, as near the patient as possible. This is far the most important means of diagnosis. But it must be well supervised and reliable. At first this may only be possible at District level. See Reference 7 p 203.
b) **Culture** for TB may later be made available as services develop. Only use it for patients with X-ray shadows suspicious of tuberculosis. Culture makes a definite diagnosis possible in milder cases which are negative on microscopy.
c) Testing for **drug resistance** is too expensive for routine use. It is desirable to have a national reference laboratory which can monitor drug resistance trends in a sample of patients, so that the authorities can modify standard treatment methods if necessary. Reliable resistance tests for isoniazid, rifampicin and streptomycin can be useful in planning retreatment in a difficult case, but in many countries will not be available for this purpose (see p 181).

4.2.5 Treatment. The national programme will state:

a) **Standard treatment for new cases**. It may be one of the regimens given in Chapter 6, section 2 (p 153) or in section 3 (p 159). In a poor country it may be one of the cheaper (but also highly effective) regimens which have to be given for a year (p 161). But more and more countries are now recognising that one of the somewhat **more expensive 6- or 8-month regimens containing rifampicin actually saves money** because it works more quickly, fewer patients stop treatment too early and disappear, and more are permanently cured. Also, to omit streptomycin saves money on providing syringes and injections. This 'shortcourse chemotherapy' is now officially recommended by WHO and the International Union Against Tuberculosis and Lung Disease (IUATLD).
b) Possibly a different standard treatment for '**chronic**' or **relapsed cases** who have had previous treatment (p 180). Some patients may relapse because their course of treatment was too short. Their TB will still be sensitive. Others may have had bad drug combinations and have resistant TB: the regimen recommended in the programme should be designed to deal with the commonest local pattern of drug resistance. See p 180.
c) Some programmes may recommend a different regimen for sputum negative patients (e.g. 4 months' short course chemotherapy instead

of 6 months': see p 154) and/or children. But it is obviously less confusing to give the same regimen to all newly diagnosed patients with tuberculosis.

4.2.6 Treatment supervision. This should be laid down in the programme. The whole success of the programme depends on good supervision of treatment. Ideally treatment should be directly supervised (that is the patient is seen to take each dose), at least for the first two important months. In some programmes the patient is admitted to hospital for the first 2 months. In others he is admitted to a hostel near a clinic. In yet others he attends a clinic or health post for each dose: if this is the method, make sure he is not kept waiting. If he is kept waiting he may not come back. In some rural areas supervision may have to be done by some local responsible person or volunteer. The programme will lay down a method for recalling patients who have failed to report for treatment or failed to collect their drugs. If no such system exists in your area it is important to make your own arrangements (see p 146).

4.2.7 Records

a) In order to run a successful Tuberculosis Control Programme there must be good records.

- Records are important for you in your **Clinic/Health Centre** so that you can make sure that you fully follow up your patients and that all patients complete treatment.
- Returns from Clinics/Health Centres are important at *District/Area* level so that administrators can make sure you have the drugs and materials to diagnose and treat your patients. They can also compare the work of different clinics and compare their own results with those of other Districts.
- Returns from Districts are important at *National* level for evaluating patient progress, comparing Districts and planning supplies.

Filling up forms is a nuisance but it is an essential part of a good National Tuberculosis Control Programme. Make sure you and your staff do it carefully and well. It is important not only for your own day-to-day work. It is also an important step to your getting the materials and support you need for your patients.

The programme will state the methods for recording numbers of sputum tested, numbers found positive, routine follow-up of patients with regular sputum tests to ensure sputum-conversion to negative, deaths, defaults, relapses and numbers successfully completing treatment. The easiest way to collect relevant information on casefinding and evaluation of treatment is to have a

'District Tuberculosis Register' in every District (area). This should contain each patient's name, address, site of disease, whether sputum positive on diagnosis, and results of smear examinations at follow-up until treatment is completed.

This record will give an indication of how enthusiastically health workers are looking for patients and how successful they are in curing them with a full course of treatment. The Register should also record the number of sputum negative patients diagnosed clinically or by X-ray as pulmonary tuberculosis, as well as numbers with non-pulmonary disease. It should also record the numbers defaulting (lost to observation) and number of relapses. It will also show numbers transferred to another District to continue treatment.

b) The programme may define the type of patient to be recorded, e.g.:
New patients:

- Sputum positive pulmonary tuberculosis: at least two direct smear positive sputa.
- Culture positive pulmonary tuberculosis: in areas where culture is possible.
- Sputum negative pulmonary tuberculosis: diagnosis made on clinical and/or X-ray: if possible this diagnosis should only be made by a doctor.
- Non-pulmonary tuberculosis: Confirmed by bacteriology or histology. Clinical diagnosis, usually by a doctor: diagnosis will include organ affected, e.g. miliary tuberculosis, tuberculous meningitis, spinal tuberculosis.

Relapse/retreatment patients: Patients who have been previously diagnosed as tuberculous, who have had treatment (complete or partial) with improvement or disappearance of symptoms for one or more months. He/she has now returned with clinical and/or bacteriological (e.g. positive sputum) evidence of active tuberculosis.

Patients lost to observation (defaulters): Patients who have failed to attend for 2 or more months in spite of every effort to trace them: the exact definition may vary in different programmes.

Transfers out: Patients who have moved to another area. Only include such a patient if you have made arrangements for his/her treatment at a health facility in the new area.

c) **Record forms and registers.** Your national programme will provide these. For examples see References 8 or 9, p 204.

d) All this will build up a picture of national progress in casefinding and treatment. It will also show up local differences, which may be due either to differences in the amount of tuberculosis or differ-

ences in the enthusiasm of the health workers. Make sure you are one of the enthusiasts who do a good job.

4.2.8 **Regular and uninterrupted supplies of drugs** and materials for microscopy (4.2.4 above) are essential to success.

4.2.9 **Repeated** central and local **training sessions and seminars** will compare success rates in diagnosing and treating patients in different places and help health workers to learn from one another.

4.2.10 **BCG vaccination** should be given to all newborn children (with certain exceptions: see p 14) through the national Expanded Programme of Immunisation. All infants should be vaccinated within a year of birth.

4.2.11 FAMILY CONTACTS of tuberculous patients.

a) A patient with a positive sputum will often infect members of his or her own family, especially children. Obviously this is because a family lives in close contact. If your patient has a positive sputum examine his family to find **who he may have infected**.
b) On the other hand, if the patient you first diagnose is a child with tuberculosis, examine the family to see **who may have infected the**

How to manage family contacts

1. **Figure 5** is a flow chart on how to manage a **child contact** if you **can** do a tuberculin test (see p 187).
   Remember the tuberculin test *may be negative*:

   - if the child has been infected with TB only recently and has not yet become tuberculin positive;
   - if the child is malnourished or ill with another disease (see p 46);
   - if the child is very ill with tuberculosis.

   Remember that it is particularly important to give preventive ('prophylactic') isoniazid treatment, as in Figure 5, to children aged 5 years or less. These young children are in particular danger from the severe forms of tuberculosis, miliary or meningitis.
2. **Figure 6** is a flow chart on how to manage a **child contact** if you **cannot** do a tuberculin test.
3. **Figure 7** is a flow chart on how to manage an **adult contact**. Here a tuberculin test is less useful, as many adults will be tuberculin positive.
   Remember that it is important to examine **all** adults living in the family home. In particular remember the grandparents. One of them may be the infector.

child. It might be a parent or a grandparent. Of course you will also look for anyone else in the family who has been infected.

c) Remember that a recently infected child (or adult) may still have a negative tuberculin test and appear well. A positive test, and perhaps illness, may only show later.

d) Your national tuberculosis control programme may state a routine for managing family contacts. If so, follow it.

If you have no national programme, or it does not provide a routine plan, we suggest you follow the guidance and flow charts which follow. How you manage contacts will depend partly on whether you can do **tuberculin tests** and whether you can do X-rays.

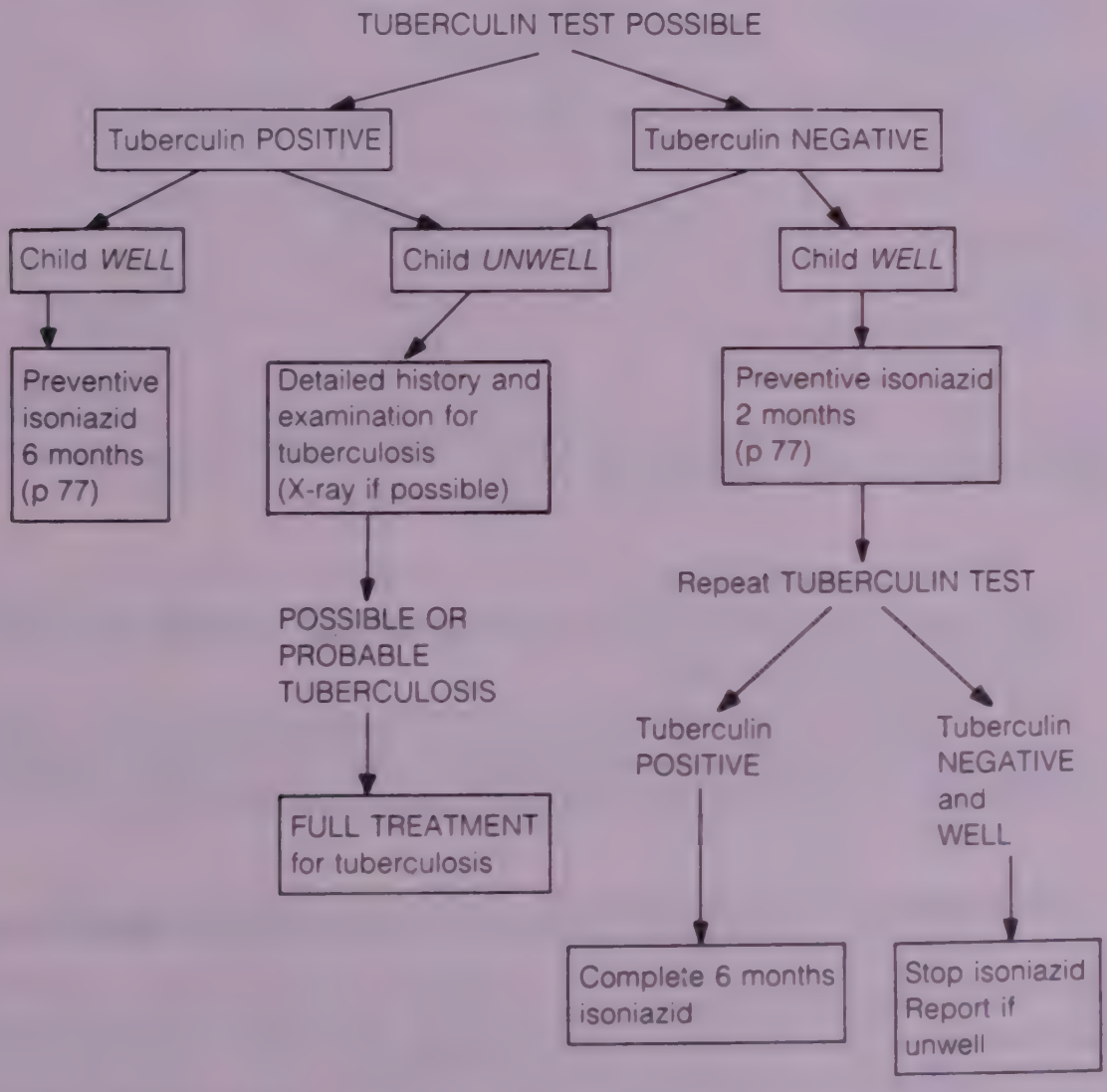


Figure 5 Flow chart: *how to manage a child contact* of a newly diagnosed patient with tuberculosis

4.3 Conclusions

If your country has a national Tuberculosis Control Programme, make sure you are familiar with it. In particular:

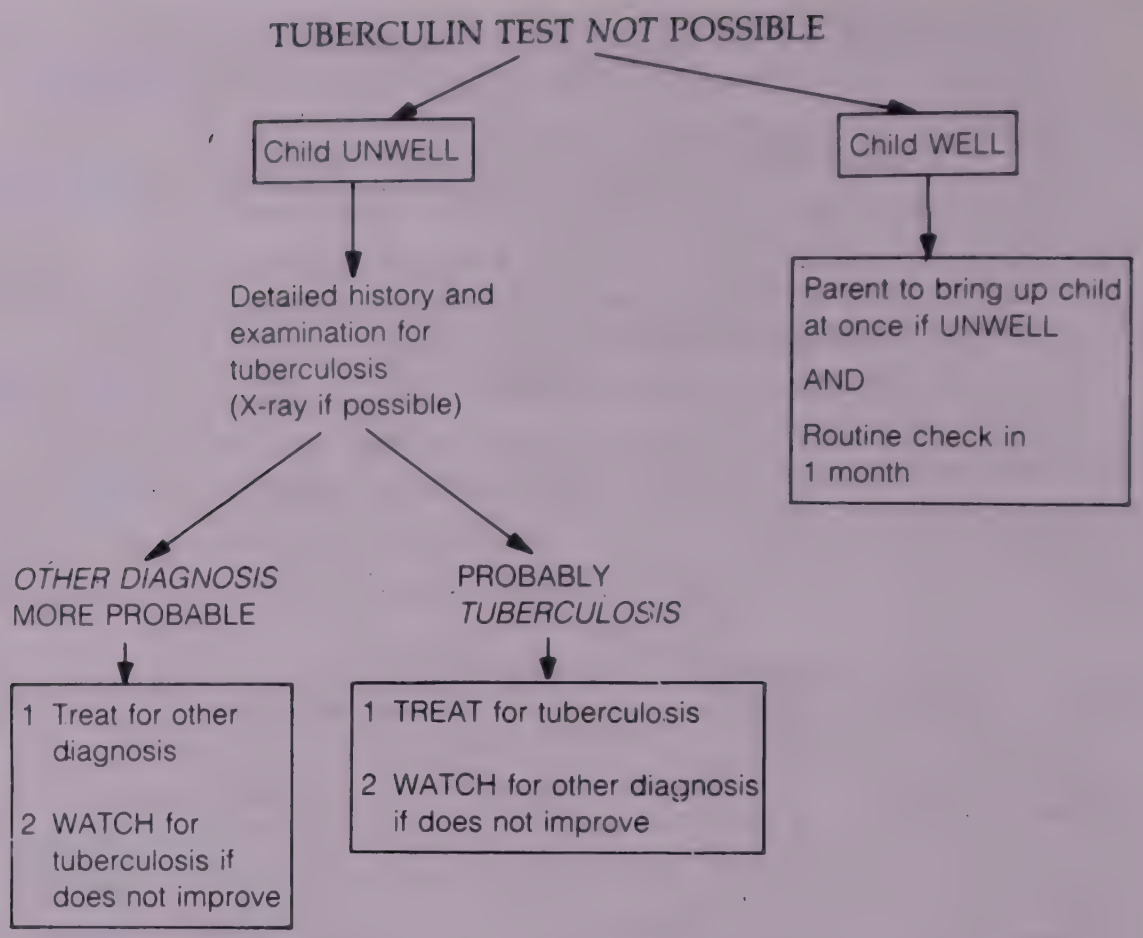

TUBERCULIN TEST *NOT* POSSIBLE
Child UNWELL
Child WELL
Detailed history and examination for tuberculosis (X-ray if possible)
Parent to bring up child at once if UNWELL
AND
Routine check in 1 month
OTHER DIAGNOSIS MORE PROBABLE
PROBABLY *TUBERCULOSIS*
1 Treat for other diagnosis
2 WATCH for tuberculosis if does not improve
1 TREAT for tuberculosis
2 WATCH for other diagnosis if does not improve

Figure 6 Flow chart: *how to manage a child contact* of a newly diagnosed patient with tuberculosis

- **Make sure that you test the sputum of any patient who could possibly have tuberculosis.**
- Give **treatment** in accordance with the national programme. DON'T TAKE SHORT CUTS OR USE SOME NEW UNTRIED CHEMOTHERAPY. EITHER MAY BE FATAL FOR YOUR PATIENT.

4.4 Integration of control programme into primary health care

4.4.1 Many National Tuberculosis Programmes were started as programmes exclusively devoted to tuberculosis. Few of these managed to cover the whole population. As a result WHO now recommends that all health programmes in developing countries, including those for tuberculosis, should be carried out through the routine services. Tuberculosis experts will help to plan, supervise, train and retrain. When the programme is fully established the primary care workers will decide about testing sputum for TB. If the sputum is positive the primary care worker will start routine treatment. He or she will refer difficult cases for expert advice.

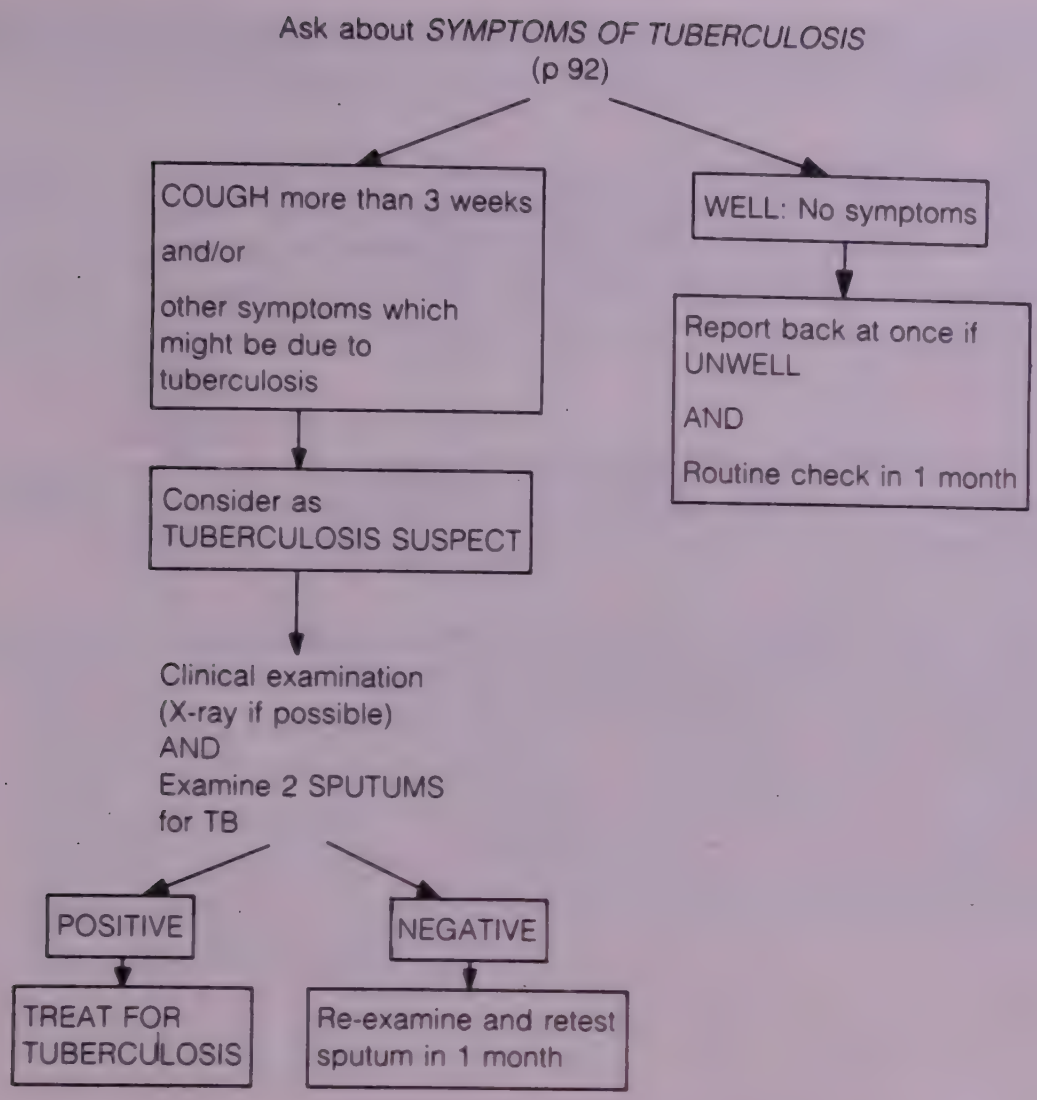


Figure 7 Flow chart: *how to manage an adult contact* of a recently diagnosed patient with tuberculosis

4.4.2 In any programme, the resources given to tuberculosis must depend on how important a health problem it is in that country or area.

4.4.3 Although it is easy to accept this idea in theory, making it really work, or switching over from a previous 'specialised' programme to a programme working well through routine services is **very difficult in practice**: the aims must be to rouse the enthusiasm of primary care workers; to praise their successes; to help them overcome their failures; to **train, train and retrain** – not only in techniques but, above all, in **management**; to get workers regularly together to discuss their problems; and above all to provide **leadership** to which workers so readily respond. All these can help in achieving success. It may be best to get diagnosis and treatment first working well at Provincial and District level. Then it should be possible to move at least some diagnosis and treatment out to Health Posts/Health Centres etc.

DIS-319

Make sure that you yourself make your own contribution to leadership, to developing the programme and to making sure it goes on working.

4.4.4 In defeating tuberculosis **management skills** are every bit as important as clinical skills. There must be a **strong team of experts with the authority** and enthusiasm to ensure that the programme is carried out at primary care level. The team should also be available to give expert advice when needed.

4.4.5 After all, **tuberculosis** can virtually **always be cured, and spread of tuberculosis can be prevented**. We have the tools to do the job. This book is to help you to use some of these tools more effectively.

Source : Clinical Tuberculosis by Sir John Crofton, Norman Horne and Fred Miller 1992
(Acknowledged with grateful thanks)

THE TUBERCULOSIS ASSOCIATION OF INDIA

3, RED CROSS ROAD
NEW DELHI-110 001

HELP FIGHT TB

TB patients should take the drugs regularly and in prescribed dose and as long as the doctor advise. They should visit the doctor for check-up and assessment as and when called. The drugs are supplied to the patients FREE in all the Health Centres, Hospitals and TB Clinics. Patients who take drugs regularly do not pose any danger to their family and, therefore, even isolation is not necessary.

STRENGTHEN YOUR TB ASSOCIATION TO HELP YOU

JOIN US TO FIGHT TUBERCULOSIS

DONATE GENEROUSLY FOR THE CAUSE

PLEASE DO BUY TB SEALS

A TB SEAL COST ONE RUPEE

Donation to the Tuberculosis Association of India are exempt under section 80-G of the income Tax Act, 1961.

Anyone can get Tuberculosis. Tuberculosis does not respect age, sex, wealth or poverty. However, Tuberculosis is more among

- *Males than females*
- *Older people than young*
- *Poor than rich people.*

The number of Tuberculosis patients per 1,000 population is the same in villages and cities.

Since more people live in villages, more patients are found in villages.

WE SOLICIT YOUR PARTICIPATION

IN ALLEVIATING HUMAN SUFFERING

Florence Nightingale's prophetic words still apply today, nearly 125 years after they were first uttered in 1863. She had said then, "As a general rule, the poor would recover very well in their own miserable, stinging dwellings if they received proper and efficient medical aid".

In the past bed rest in sanatorium or hospital used to be considered vital to TB treatment. A major study in Madras showed that chemotherapy was just as successful at home as at hospital. In other words there is no difference between hospital and home management.

Tuberculosis

Prime Messages

1 Tuberculosis (TB) is a preventable disease that can cause suffering and death among young and old. It is partcularly severe in children under 5 years of age.

2 Children can be protected against TB through BCG immunization. BCG should be given as soon after birth as possible.

3 Well nourished children are better able to resist TB infection.

4 Children are infected by adults who cough out TB germs. These adults should receive adequate treatment for TB. They should not cough or spit near young children.

5 Serious manifestations of TB in children include TB of the brain (meningitis) which often leads to death. Those that survive may become mentally handicapped. TB also affects lungs, bones and glands.

6 Tuberculosis can be cured.

7 Tuberculosis is not dangerous if the patient is treated.

SOURCE : *Facts For Life —A UNICEF—UNESCO—WHO Publication*

What every family and community has a right to know about

Tuberculosis

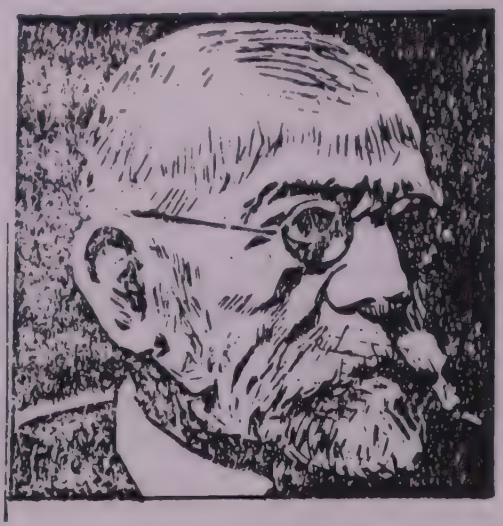
Note to communicators

Tuberculosis (TB) remains a big problem in India. It affects every age, but young children are particularly susceptible. One lakh children under five years develop TB every year in India.

The seven prime messages in this chapter can help families and communities understand how TB can be prevented. Family and community action is needed to reduce illness and deaths from TB. The prolonged illness places a serious burden on the family's resources.

The cause of TB is a germ which is spread through the air by persons who have the disease. These persons spread the infection mainly by coughing and spitting and also by breathing close to other people.

SOURCE : ***Facts For Life —A UNICEF—UNESCO—WHO Publication (EXTRACT)***



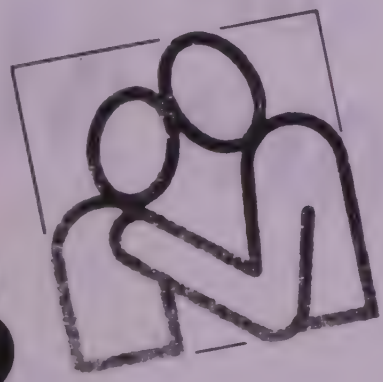
The first big breakthrough in Mankind's struggle to control tuberculosis was reported on March 24, 1882 when Robert Koch announced his discovery of the tubercle bacillus to a small circle of scientists in the Institute of Hygiene at Berlin University. At this memorable session Koch appeared with an announcement which marked a turning-point in the story of a most virulent human infectious disease, and which paved the way towards a new era of research and disease control.

In clear simple words Koch explained the aetiology of tuberculosis with convincing force, presenting many of his microscope slides and other pieces of evidence. Everyone was deeply and profoundly affected. At the end of this memorable lecture, Koch declared: "I have carried out my investigations in the interest of public health care and because I hope they will bring about the greatest benefits for public health."

Robert Koch won the Nobel Prize for Medicine in 1905.

What every family and community has a right to know about

Aids



Note to communicators

Acquired Immune Deficiency Syndrome, or AIDS, is a new global problem. Every nation is threatened by it, and as many as 5 to 10 million people may already be infected with the AIDS virus world-wide. It kills by damaging the body's defences against other diseases. As of 1989, there is no known cure.

Increasing numbers of babies are being born with the AIDS virus and many millions of children will be orphaned by it.

The five prime health messages in this chapter, if known about and acted on by all, could drastically reduce the future scale of this tragedy.

At the moment, the only effective weapon against the spread of AIDS is public education. That is why every person in every country should know how to avoid getting and spreading the AIDS virus.

Source : FACTS FOR LIFE - A UNICEF-UNESCO-WHO Publication :
Acknowledged with grateful thanks.

AIDS Prime Messages

1 AIDS is an incurable disease which can be passed on by sexual intercourse, by infected blood, and by infected mothers to their unborn and newborn children.

2 Safe sex means being sure that neither partner is infected, remaining mutually faithful, and using a condom if in doubt.

3 Any injection with an unsterilized needle or syringe is dangerous.

4 Women with the AIDS virus should avoid becoming pregnant.

5 All parents should tell their children how to avoid getting AIDS.

AIDS Supporting Information

1

AIDS is an incurable disease which can be passed on by sexual intercourse, by infected blood, and by infected mothers to their unborn and newborn children.

○ AIDS is caused by a virus which damages the body's defence systems. People who have AIDS die because the body can no longer fight off other serious illnesses.

○ Not everybody with the AIDS virus has developed AIDS. But anybody with the AIDS virus can infect others.

○ There are no obvious signs that a person has the AIDS virus. They may look perfectly normal and healthy.

○ Anyone who suspects that he or she may have the AIDS virus should seek out an AIDS testing centre. It is vital for those who have the virus to receive advice and to learn how to avoid passing it to others.

○ The AIDS virus can only be passed from one person to another in a limited number of ways:–

○ By the blood or semen or vaginal fluid of an infected person passing into the body of another person. The AIDS virus can therefore spread by sexual intercourse. It can be passed from man to man, man to woman, and woman to man.

○ By the self-injection of drugs. The sharing of unsterilized needles or syringes for the purpose of injecting drugs is another common way in which the AIDS virus is spread, particularly in the industrialized countries.

○ By blood transfusions, if the blood used has not been tested.

○ By an infected woman to her unborn or new-born child.

○ There is a remote risk from sharing tooth brushes and razors, though there are no known cases of the AIDS virus being passed on in this way.

○ It is not safe to use unsterilized equipment for ear-piercing, tattooing, facial marking, or acupuncture.

○ A mother with the AIDS virus should continue to breastfeed her baby.

There is a very small risk that the AIDS virus could be passed on to the baby by breastfeeding. But the risks of bottlefeeding a baby are known to be very much greater, especially in a poor community.

- It is not possible to get the AIDS virus from being near to or touching those who have the AIDS virus. Hugging, kissing, shaking hands, coughing and sneezing will not spread the disease. The AIDS virus cannot be transmitted by toilet seats, telephones, plates, glasses, spoons, towels, bed linen, swimming pools or public baths.

- National child immunization programmes use needles which are sterilized between each use and are therefore safe. All infants should be taken for a full course of immunizations in the first year of life.

- Other injections are often unnecessary as many useful medicines can be taken by mouth. Where injections are necessary, they should be given only by a trained person using a sterilized needle and syringe.

2

Safe sex means being sure that neither partner is infected, remaining mutually faithful, and using a condom if in doubt.

A guide to safer sex

- The best way to avoid AIDS is to stay in a mutually faithful relationship with an uninfected partner.

- The more sex partners you have, the greater the risk of having sex with someone who is infected.

- The more partners your partner has, the greater the risk that you will be infected.

- Unless you and your partner have sex only with each other, and are sure you are both uninfected, you should protect yourselves by using a condom (a sheath or rubber).

- The following kinds of sex are much more risky than others: –

  - Anal intercourse (in which the penis enters the rectum or back passage)
  - Any sexual practice which causes even slight bleeding
  - Sex with male or female prostitutes
  - Sex with any persons who inject themselves with drugs

3

Any injection with an unsterilized needle or syringe is dangerous.

- Drug abuse, involving the sharing of unsterilized needles or syringes by

two or more persons, is one of the main ways in which the AIDS virus is spread in the industrialized countries.

- A needle or syringe can pick up small amounts of blood from the person being injected. If that person's blood contains the AIDS virus, and if the same needle or syringe is used for injecting another person without being sterilized first, then the AIDS virus can be injected.

- Self-injection with drugs is in itself dangerous. But because of the additional risk of AIDS, those who do inject drugs should never use another person's needle or syringe or allow their own needle or syringe to be used by anyone else.

- Those who inject drugs are therefore particularly at risk from AIDS. So are those who have sex with those who inject drugs.

4

Women with the AIDS virus should avoid becoming pregnant.

- Women with the AIDS virus have about a 50% chance of giving birth to a baby who will also have the AIDS virus. Most babies with the virus will die before they are three years old.

- Women who know or suspect that they have the AIDS virus should therefore avoid becoming pregnant.

- In some countries, tests are available to people who are concerned that they might have the AIDS virus. A woman who wants to have a baby, but suspects that she may have the AIDS virus, should try to have the test first. This is especially important if she lives in an area where many people have AIDS.

5

All parents should tell their children how to avoid getting AIDS.

- Apart from protecting yourself and your partner, you can also help to protect your children against AIDS by making sure they know the facts about how to avoid getting and spreading the disease.

- In this way, everyone can help in the world-wide effort to stop the AIDS virus from spreading to the new generation.

TB SEALS

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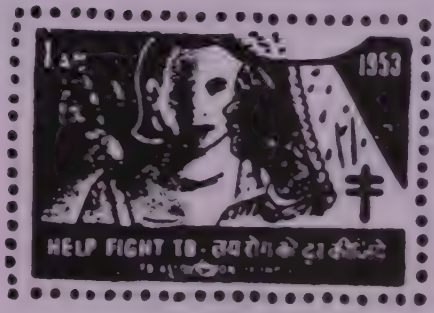

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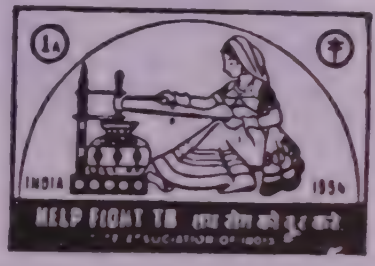

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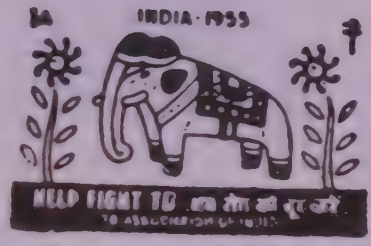

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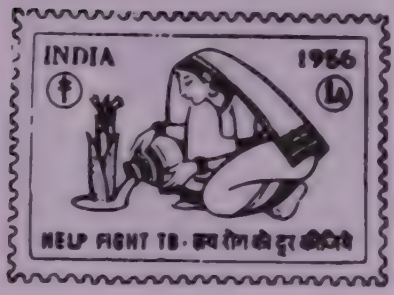

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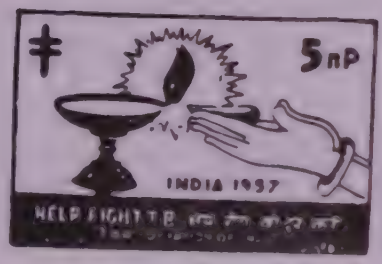

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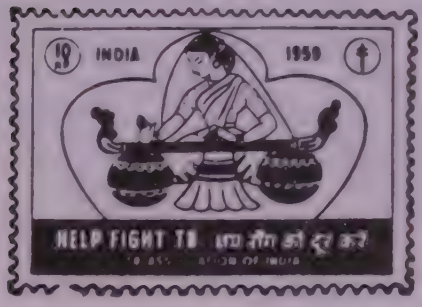

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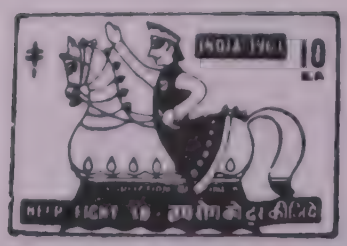

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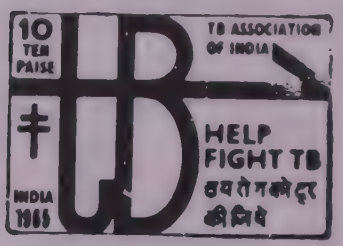

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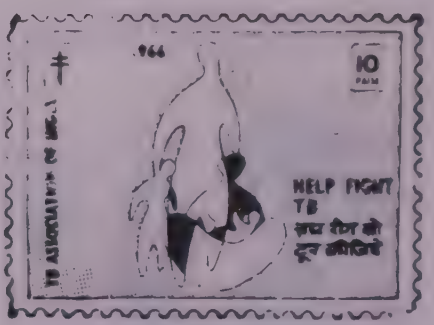

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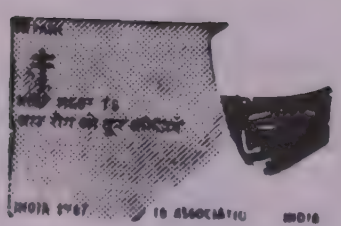

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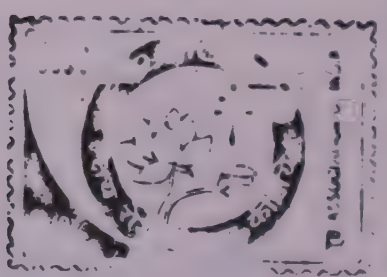

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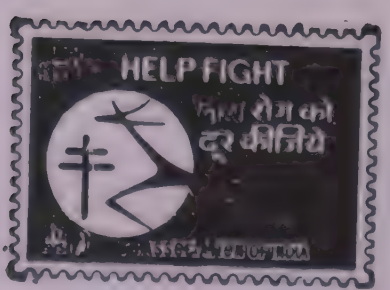

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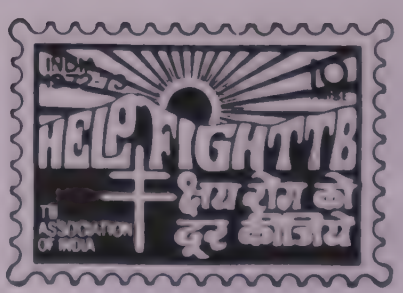

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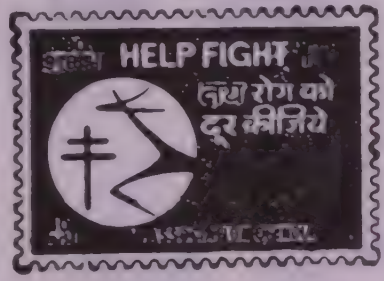

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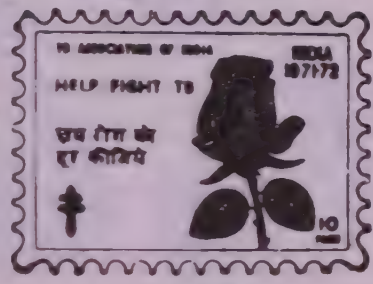

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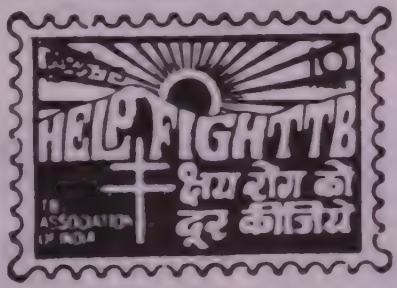

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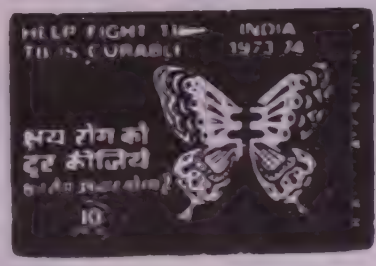

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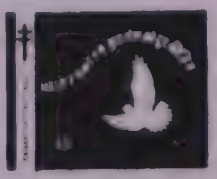

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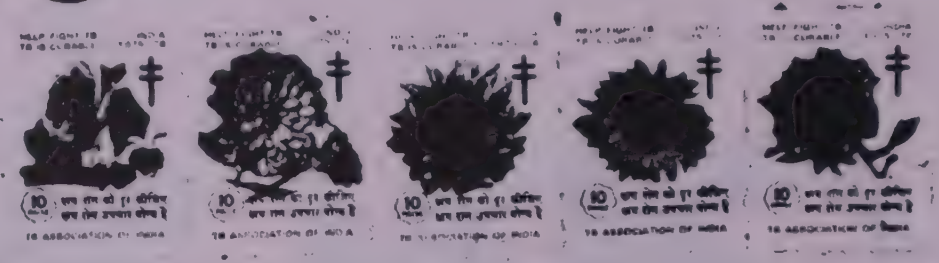

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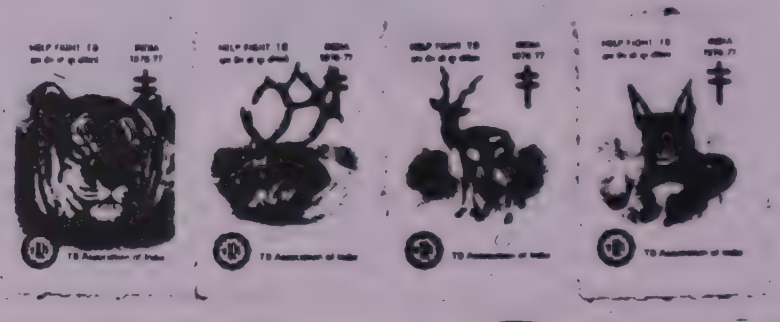

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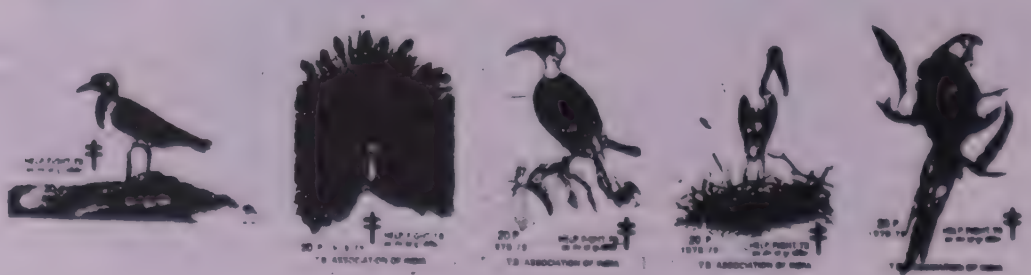

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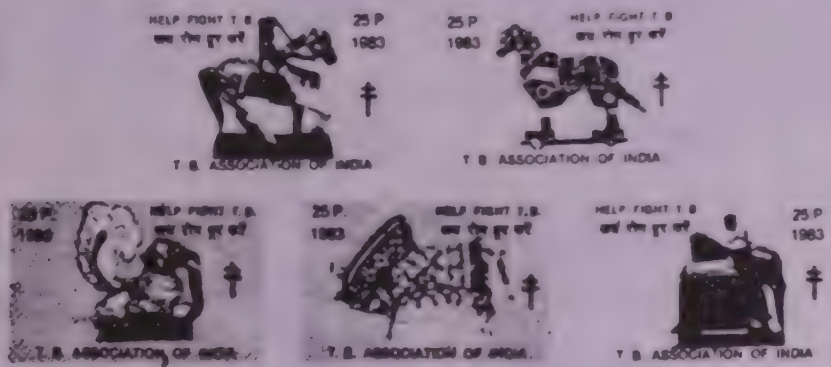

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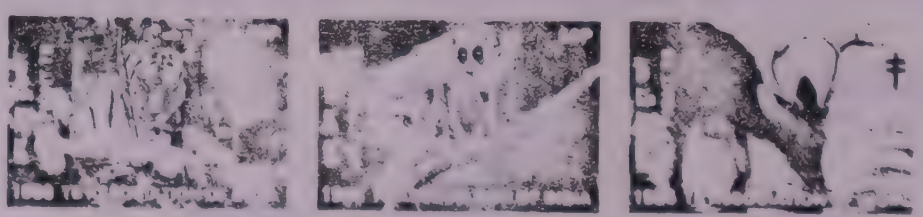

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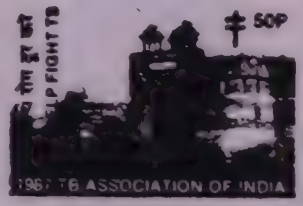

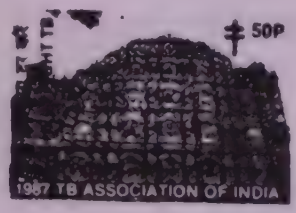

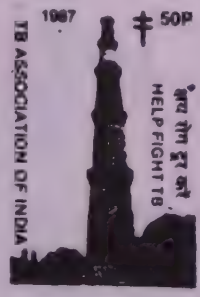

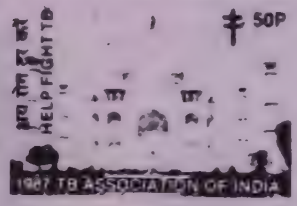

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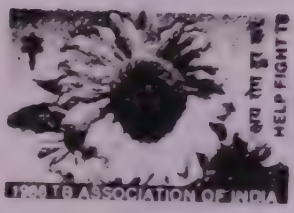

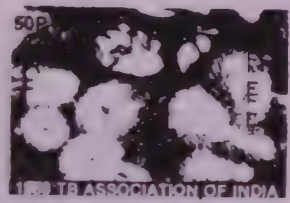

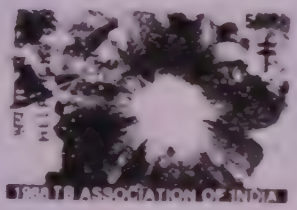

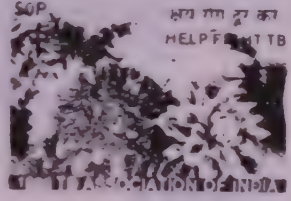

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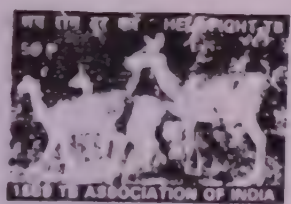

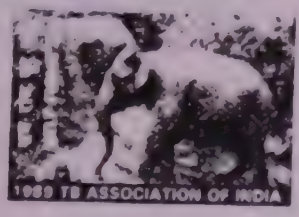

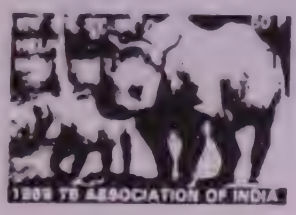

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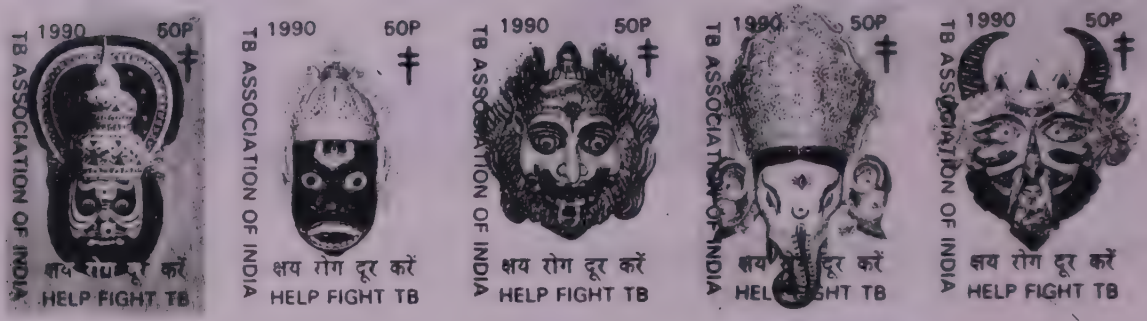
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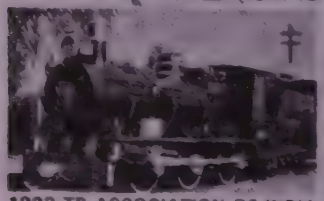

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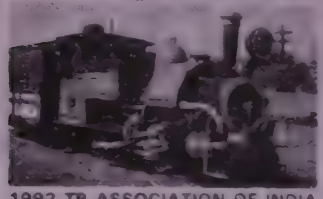

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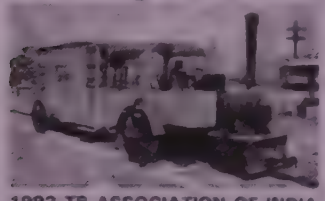

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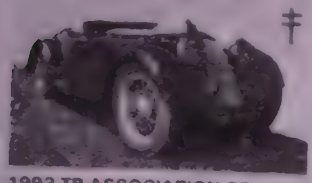

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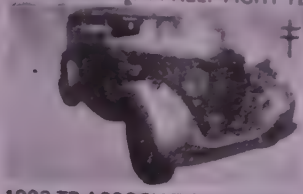

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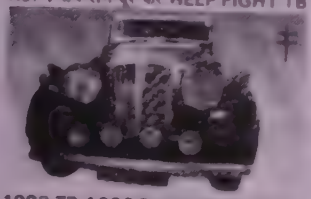

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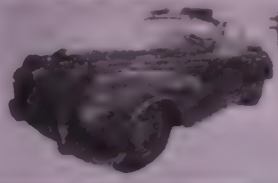

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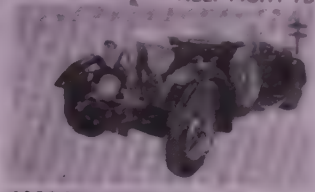

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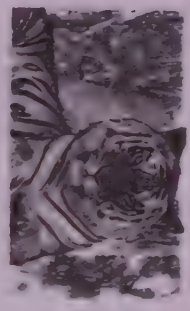

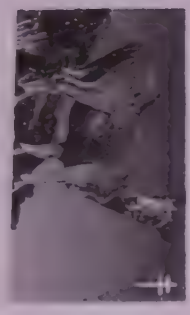

STATE TUBERCULOSIS ASSOCIATIONS

1. The Honorary Secretary,
TB Association of Andhra Pradesh,
3-4-760, Barkatpura,
Hyderabad-500 027.

2. The Honorary Secretary,
TB Association of Arunachal Pradesh,
Directorate of Health Services,
Government of Arunachal Pradesh,
Naharlagun-791 111.

3. The Honorary Secretary,
TB Association of Assam,
L.G.B. Chest Hospital Campus,
Gopinath Nagar, Gauhati-781 016.

4. The Honorary Genl. Secretary,
Bengal TB Association,
24, Dr. Sundari Mohan Avenue,
P.O. Entally, Calcutta-700 014.

5. The General Secretary,
Bihar TB Association,
Abedin Building, Ist Floor,
North Wing, Fraser Road,
Patna-800 001

6. The Honorary General Secretary,
Delhi TB Association,
9, Institutional Area,
Lodi Road, New Delhi-110 003

7. The Honorary Secretary,
Goa TB Association,
403, Nizari Bhavan,
Menezes Braganza Road,
Panaji (Goa).

8. The Honorary Secretary,
Gujarat State TB Association,
F/6, Saraswati Apartments,
Opposite Gandhigram Railway Station, Navrangpura,
Ahmedabad-380 009.

9. The Honorary Secretary,
TB Association of Haryana,
35-36-37, Madhya Marg,
Sector-7,
Chandigarh-160 017.

10. The Honorary Secretary,
Himachal Pradesh TB Association,
Kennedy House,
Simla-4.

11. The Honorary Secretary,
Jammu & Kashmir TB Association,
Opposite Chest Diseases Hospital,
Dalgate,
Srinagar (Kashmir).

12. The Honorary Secretary,
Karnataka State TB Association,
3, Union Street,
Bangalore-560 001

13. The Honorary Secretary,
TB Association of Kerala,
TB Centre,
Red Cross Road,
Trivandrum-695 037.

14. The Honorary Secretary,
Madhya Pradesh State TB Association,
Kshaya Bhavan,
TB Hospital, Idgah Hills,
Bhopal-462 001.

15. The Honorary Secretary,
Maharashtra State Anti-TB Association,
O.H.T. Clinic,
Jerbai Wadia Road, Sewree,
Bombay-400 015.

16. The Honorary Secretary,
Manipur TB Association,
Lamphelpat, Imphal-795 004.

17. The Honorary Secretary,
TB Association of Meghalaya,
Police Bazar,
Shillong-793 001

18. The Honorary Secretary &
Treasurer,
TB Association of Orissa,
Health Directorate,
Bhubaneswar-751 001

19. The Honorary Secretary,
TB Association of Pondicherry,
Govt. Chest Clinic,
28, Ambour Salai,
Pondicherry-605 001.

20. The Honorary Secretary,
TB Association of Punjab,
Red Cross Bhavan,
Sector 16-A, Chandigarh-160 017.

21. The Honorary Secretary,
Rajasthan State TB Association,
TB Clinic, Jaisalmar.

22. The Honorary Secretary,
Anti-TB Association of
Tamil Nadu,
259-261,
Anna Salai,
Madras-600 006.

23. The Honorary Secretary,
TB Association of Tripura,
Agartala-799 001.

24. The Honorary Secretary,
Uttar Pradesh TB Association,
1, A.P. Sen Road,
Lucknow-226 019.

25. The Honorary Secretary,
Indian Railway Tuberculosis
Association,
Railway Health Services,
Railway Board,
Rail Bhawan,
New Delhi-110 001.

***AND SEAL SALE ORGANISATIONS**

1. The Asstt. Director (Admn),
Andaman & Nicobar Administration,
Directorate of Health Services,
Port-Blair-744 104.
2. The Asstt. Director of Health
Services, (TB),
Government of Nagaland,
Kohima.
3. The Secretary,
TB Seal Sale Campaign,
(Rajasthan),
Kamala Nehru State TB
Demonstration and Training Centre,
Ajmer-305 001.

CALENDAR OF TUBERCULOSIS WORKERS' CONFERENCE

Ist The First Conference on Tuberculosis was organised in New Delhi in November, 1934 by the King George Thanks-giving (Anti-Tuberculosis) Fund. Twenty-four delegates attended this three-day Conference.

Under the auspices of the Tuberculosis Association of India, the First All-India Tuberculosis Workers' Conference was held in New Delhi in November, 1939. Fifty delegates attended.

2nd The Second Conference was held in New Delhi in November, 1940. This was attended by ninety delegates.

3rd The Third Conference was held in New Delhi in March, 1945. Seventy delegates attended. Sir Joseph Bhore presided.

4th The Fourth Conference was held in New Delhi in November, 1946 and was attended by 110 delegates.

5th Madras invited the Fifth Conference. It was held in January, 1948. Over hundred delegates attended it. His Excellency, Sir Archibald Nye, Governor of Madras, inaugurated the conference.

6th The Sixth Conference was held in Calcutta in December, 1948. Dr. R.B. Billimoria was its President, Dr. B.C. Roy, Premier of West Bengal, inaugurated it. 130 delegates attended.

7th The Seventh Conference was held in Bombay in November, 1949. Its President was Dr. A.C. Ukil. Rajkumari Amrit Kaur, Minister for Health, Government of India, and President of the Tuberculosis Association of India, inaugurated the Conference: 130 delegates attended.

8th The Eighth Conference was held in Hyderabad in February, 1951. Dr. K. Vasudeva Rao was its President. Over 150 delegates attended. It was inaugurated by Dr. K.C.K.E. Raja, Director-General of Health Services and Chairman, Tuberculosis Association of India.

9th The Ninth Conference was held in February, 1952 in Lucknow. Dr. P.V. Benjamin was its President. Over 170 delegates attended. It was inaugurated by Dr. K.C.K.E. Raja, D.G.H.S. and Chairman, Tuberculosis Association of India.

10th The Tenth Conference met in Mysore in February, 1953. Dr. K.L. Wig presided in the absence of Late R.B. Lal, the President-elect. It was inaugurated by Rajkumari Amrit Kaur, Union Health Minister and President of the Tuberculosis Association of India.

11th The Eleventh Conference was held in Nagpur in February, 1954. Dr. K.L. Wig was its President. About 130 delegates attended. Dr. Pattabhi Sitaramayya, Governor of Madhya Pradesh, inaugurated it.

12th The Twelfth Conference was held in Amritsar in February, 1955 with Dr. B.B. Yodh as the President. About 175 delegates attended. Shri C.P.N. Singh, Governor of Punjab, inaugurated the Conference.

13th The Thirteenth Conference was held in Trivandrum in January, 1956. Dr. T.J. Joseph was its President. About 150 delegates attended. His Highness the Rajpramukh of Trivancore inaugurated it.

In 1957 there was no national TB Conference. Instead the Association hosted the International TB Conference in January that year in New Delhi. Rajkumari Amrit Kaur was Honorary President of the International Conference which was inaugurated by Dr. Rajendra Prasad, President of India, and addressed by Prime Minister, Pandit Jawaharlal Nehru.

14th The Fourteenth Conference was held in Madras in January, 1958. Dr. K.S. Sanjivi was its President. About 200 delegates attended. It was inaugurated by Shri Bishnuram Medhi, Governor of Madras.

15th The Fifteenth Conference was held in Jaipur, 1959. It was inaugurated by Dr. D.P. Karmakar, Union Health Minister. Over 200 delegates attended. Dr. B.K. Sikand was the President of this Conference.

16th The Sixteenth Conference was held in Poona in January, 1960. Over 250 delegates attended. Dr. P.K. Sen was its President. It was inaugurated by Rajkumari Amrit Kaur, Union Health Minister and President, Tuberculosis Association of India.

17th The Seventeenth Conference was held in Cuttack in January-February, 1961. It was inaugurated by Shri Y.N. Sukthankar, Governor of Orissa. Over 200 delegates attended. A new feature of the conference was that Dr. A.S. Modi attended as the Guest Speaker from Hong Kong. Dr. J. Frimodt-Moller was the President.

18th The Eighteenth Conference was held in Bangalore in January, 1962. Dr. R.N. Tandon was its President. Over 300 delegates attended. The Conference was inaugurated by the Maharaja, Shri Jayachamaraja Wadiyar Bahadur, Governor of Mysore.

19th The Nineteenth Conference was held in Delhi in April, 1964. Dr. L.R. Dongrey was its President. Over 400 delegates attended. The Conference was inaugurated by Dr. Sushila Nayar, Union Minister for Health.

20th The Twentieth Conference was held in Ahmedabad in February, 1965, and was presided over by Dr. M.D. Deshmukh. The conference was inaugurated by Nawab Mehdi Nawaz Jung, Governor of Gujarat. About 300 delegates attended it.

21st The Twenty-first Conference was held in Calcutta in February, 1966. Dr. K.N. Rao, Director-General of Health Services and Chairman, TB Association of India, was the President. About 350 delegates attended. The Conference was inaugurated by Smt. Padmaja Naidu, Governor of West Bengal.

22nd The Twenty-second Conference was held in Hyderabad in February, 1967. Major (Dr.) Khushdeva Singh of Patiala was the President of the Conference. It was inaugurated by Shri Pattom Thanu Pillai, Governor of Andhra Pradesh. Over 250 delegates attended.

23rd The Twenty-third Conference was held in Bombay in January, 1968. Dr. R. Viswanathan was its President. It was inaugurated by Dr. P.V. Cherian, Governor of Maharashtra. Over 300 delegates attended.

24th The Twenty-fourth Conference was held in Trivandrum in January, 1969. The President of the Conference was Dr. N.L. Bordia. It was inaugurated by Shri V. Viswanathan, Governor of Kerala. Over 300 delegates attended.

25th The Twenty-fifth National Conference was held in Patiala, Punjab, in January, 1970. Dr. M. Umesh Rao was the President of the Conference. It was inaugurated by Dr. C.C. Pavate, Governor of Punjab. About 250 delegates attended.

26th The Twenty-sixth Conference was held in Bangalore in January, 1971. Dr. K. Somayya was its President. Shri Dharma Vira, Governor of Karnataka, inaugurated the Conference. Over 300 delegates attended.

27th The Twenty-seventh Conference was held in Patna in November, 1972. Dr. K.N. De of Calcutta was its President. Shri Dev Kant Barooah, Governor of Bihar, inaugurated the Conference. About 250 delegates attended.

28th The Twenty-eight National Conference was held in Madras in January, 1974. Dr. S.P. Pamra was its President. Shri K.K. Shah, Governor of Madras, inaugurated the Conference. Over 300 delegates attended.

29th The Twenty-ninth Conference was held in New Delhi in November, 1974. This was combined with the IXth TB Conference of the Eastern Region of the I.U.A.T. Due to the absence of Dr. M.S. Chadha, Shri S. Ranganathan, President of the Association, presided over the Conference. The Conference was inaugurated by Shri Fakhruddin Ali Ahmed, President of India and addressed by Dr. Karan Singh, Union Minister for Health and Family Planning. Over 400 delegates attended the Conference.

30th The Thirtieth Conference was held in Hyderabad in November, 1975. Dr. H.B. Dingley was its President. Over 200 delegates attended the Conference. It was inaugurated by Shri S. Obul Reddy, Governor of Andhra Pradesh.

31st The Thirty-first Conference was held in Lucknow in November 1976. Dr. Tahir Mirza was its President. Over 300 delegates attended the Conference. It was inaugurated by Shri M. Chenna Reddy, Governor of Uttar Pradesh.

32nd The Thirty-second Conference was held in Trivandrum in November, 1977. Dr. K.V. Krishnaswami was its President. About 400 delegates attended the Conference. Smt. Jyoti Venkatachallam, Governor of Kerala, inaugurated the Conference.

33rd The Thirty-third Conference was held in Bhopal in November, 1978, Dr. J.L. Bhatia was its President.The Conference was inaugurated by Shri C.M. Poonacha, Governor of Madhya Pradesh. About 300 delegates attended.

34th The Thirty-fourth Conference was held in Jaipur in October, 1979. Dr. M.L. Mehrotra was its President. Shri Bhairon Singh Shekawat, Chief Minister of Rajasthan, inaugurated the Conference. About 300 delegates attended.

35th The Thirty-fifth Conference was held in Bombay in November, 1980. Dr. M.M. Singh was its President. Dr. Bali Ram Hira, State Health Minister, Maharashtra, inaugurated the Conference. About 650 delegates attended.

36th The Thirty-sixth Conference was held in Baroda in November, 1981. Dr. G.D. Gothi was it President Smt. Sharda Mukherjee, Governor of Gujarat, inaugurated the Conference. About 500 delegates attended.

37th The Thirty-seventh Conference was held in New Delhi in November, 1982. Dr. Jaswant Singh was its President. Shri M. Hidayatullah, Vice-President of India, inaugurated the Conference. About 600 delegates attended.

38th The Thirty-eight Conference was held in Panaji in October, 1983. Dr. S. Sivaraman was its President. Shri K.T. Satarwala, Lt. Governor of Goa, Daman Diu, inaugurated the Conference. About 700 delegates attended.

39th The Thirty-ninth Conference was held in Cuttack in January, 1985. Dr. A.G. Patel was its President. Shri B.N. Pandey, Governor of Orissa, inaugurated the Conference. About 500 delegates attended.

40th The Fortieth Conference was held in Shillong in November, 1985.Dr. D. Umapathy Rao was its President. Smt. Mohsina Kidwai, Union Minister for Health and Family Welfare, inaugurated the Conference. About 400 delegates attended.

41st The Forty-first Conference was held in Hyderabad in October, 1986,. Dr. S.P. Gupta was its President. Smt. Kumudben Mani Shankar Joshi, Governor of Andhra pradesh, inaugurated the Conference. About 500 delegates attended

42nd The forty-second Conference was held in Lucknow in December 1987. Dr. P.A. Deshmukh was its President. Shri Lokpati Tripathi, Minister for Health and F.W., U.P. inaugurated the Conference. About 500 delegates attended.

43rd Forty-third Conference was held in Calcutta in December 1988. Dr. S.P. Tripathy was its president. Prof. S. Nural Hasan, Governor of West Bengal inaugurated the conference. About 450 delegates attended.

44th The 44th National Conference on Tuberculosis and Chest Diseases was held in Madras in December, 1989. In the absence of Dr. S.C. Kapoor President of conference, Dr. K. Jagannath presided over the conference. Dr. K. Deivasigamani, Minister for Health & Family Welfare, Government of Tamil Nadu, inaugurated the conference. About 600 delegates attended.

45th The 45th National Conference on Tuberculosis and Chest Diseases was held in Rohtak (Haryana) in January 1991. Prof. K.C. Mohanty was its President. Shri Dhanik Lal Mandal, Governor of Haryana, inaugurated the Conference. About 400 delegates attended.

46th The 46th National Conference on Tuberculosis and Chest Diseases was held in New Delhi in November 1991. Dr. S.B. Trivedi was its President. Dr. M.S. Chadha, President, Tuberculosis Association of India, inaugurated the Conference. About 450 delegates attended.

47th The 47th National Conference on Tuberculosis and Chest Diseases was held in Bombay in November 1992. Dr. D.P. Verma was its President. Shri C. Subramaniam, Governor of Maharashtra, inaugurated the Conference. About 600 delegates attended

48th The 48th National Conference on Tuberculosis and Chest Diseases was held in Bhopal (Madhya Pradesh) in December 1993. Dr. M.M.S. Siddhu was its President. Shri Mohammed Shafi Qureshi, Governor of Madhya Pradesh, inaugurated the Conference. About 450 delegates attended.

The patient must collect and consume drugs regularly. If treatment is stopped prematurely or medicines are not taken regularly in the prescribed doses, the treatment will be a failure and the patient's life will be in danger. Then, he will also be a source of danger to the community by continuing to infect others.

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Source : From IJT Brochure of the Tuberculosis Association of India

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1895	:	Roentgen discovered in Vienna, the X-ray which allow an examination of the chest. For the first time, there were radiological images available, which showed the extent of the lesions in patients.
1921	:	A. Calmette and C. Guerin discovered BCG, an attenuated form of the bovine bacillus, as vaccination against tuberculosis.
1944	:	Selman A. Waksman and his colleagues, discovered Streptomycin, an antibiotic effective against tuberculosis.
1946-1952	:	New drugs appeared viz., para-aminosalicylic acid (PAS) and Isoniazid (INH). These drugs are highly effective and very inexpensive.
1966	:	Rifampicin proved to be an excellent drug against tuberculosis.

Source : Facts and figures on Tuberculosis and National Tuberculosis Programme : 1944; National Tuberculosis Institute, Bangalore.
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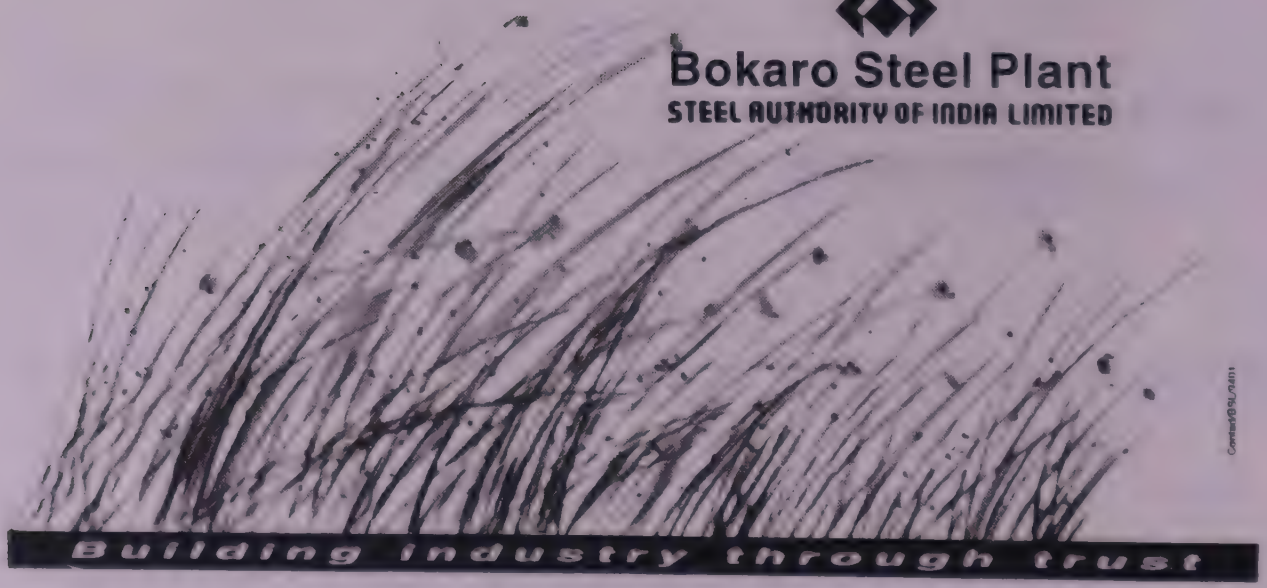

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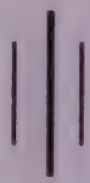

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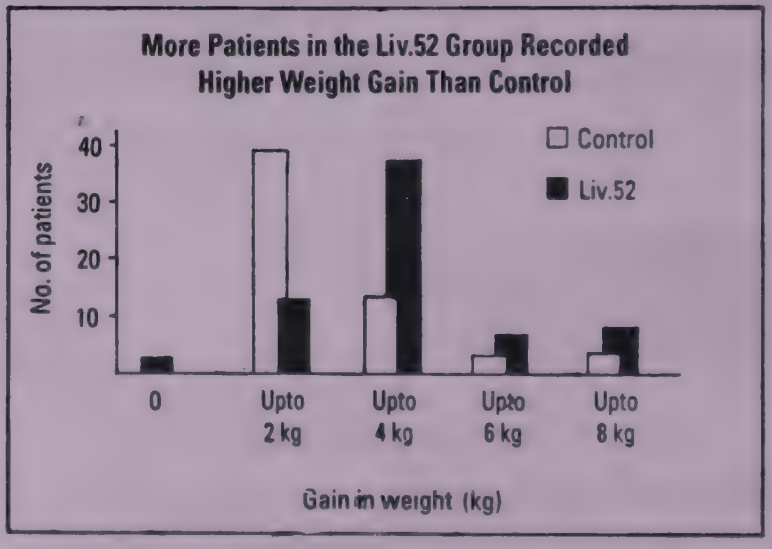

The addition of Liv.52 to the regimen containing rifampicin is helpful in reducing rifampicin-induced side-effects.

Purohit, S.D., *M.D., D.C.D., F.N.C.C.P., F.C.C.P. (U.S.A.) et al* Dept. of Respiratory Diseases and Tuberculosis, S.M.S. Medical College, Jaipur, Rajasthan.

Probe (1988) : 4, 261

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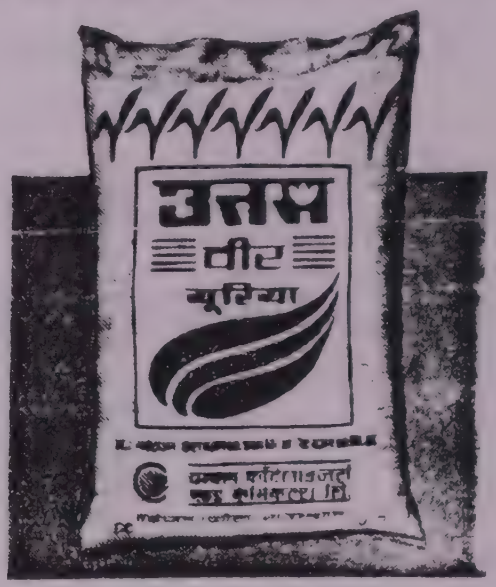

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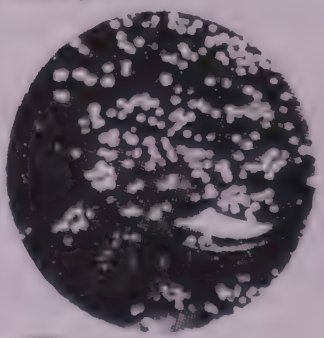

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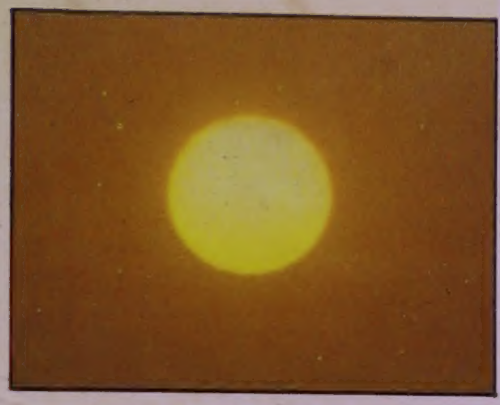

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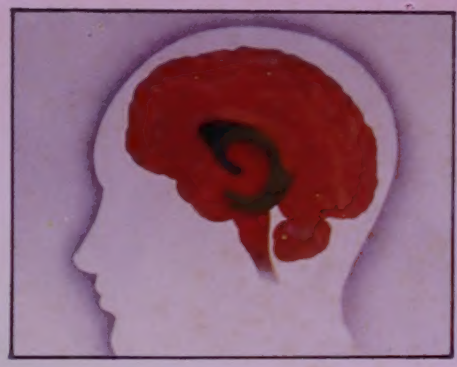

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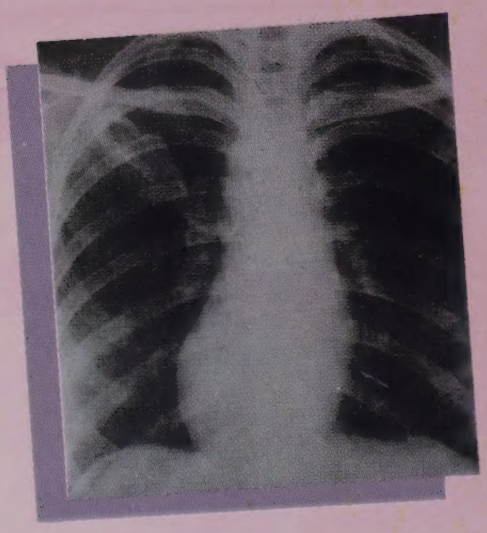

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